

13-19 March 1986

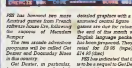
It's the best selling weekly 40 Rock C **Vol 5 No 11**

Atari plans CP/M and IBM emulators

ATARI has announced that CP/M and IBM PC emulation packages are to be introduced for its ST range, which now includes the 520STM and 1040STF (see *Popular Computing Weekly* March 6) It also declared future plans for a word processor machine

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PSS has licensed two more Amstrad games from French software house Ere, following the success of Macadam Bumper

The two arcade adventure programs will be called Get Dexter and Doomsday Blues in this country

Get Dexter, in particular, features very detailed, stylised 3D graphics and interactive gameplay in the style of Alien 8 and Knight Lore (for a full review see this week's New Releases on page 36)

Doomsday Blues also features highly detailed graphics with a fully animated central figure Both games are due for release at the end of this month when English language packaging has been prepared. They will retail for £9 95 (tape) or £14 95 (disc)

PSS has indicated that there is to be a sequel to Get Dexter planned for release in about six months



In this issue

COMMODORE'S 128D

Read our full review Starts page 10

INSIDE) AMSTRAD PCW 8512 LAUNCH DATE CONFIRMED - P4)

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EDITORIAL

The very fact that Amstrad has felt the need to introduce the PCW 8512 says a lot about the way the company is moving

It indicates, for one thing, that Amstrad has been selling some 8256s into the serious business arena rather than supplying to individuals who would like low-cost word processing

For the latter, the 8256 is more than adequate For the former, the extra memory and, more particularly, the second disc drive, is much more important.

The PCW 8256 was designed to create a market. It appears that it has created two, since Amstrad has asserted that the 8512 will not replace the first PCW machine, but complement it

And, of course, the 8512 is planned to consolidate Amstrad a foot in the door of the business market The twin disc drive extra memory, and the fact taht a software base on the PCW s 3½ inch discs is now available and growing, makes it a serious contender rather than a low-cost option.

That 'foot in the door' will be all-important come the autumn, when Amstrad's much touted IBM PC Compatible is due to make its appearance

When Amstrad entered the computer market (a mere 21 months ago) its one-box policy set its competitors thinking Commodore has made efforts to 'go the Amstrad route with its CP/M modes on the 128 machines, and the monitor and disc drive packaged with the 128D Sir Clive Sinclair however, has decided that Sinclair and Amstrad are selling to different markets

The only company to acknowledge Amstrad's success whole-heartedly is Atari Sam Tramiel, Atari's president, has announced that Atari is planning a 'PCW basher' in the shape of a competitive one-box package for the late summer

But Atari may well be too late By the time its 'basher appears Amstrad will have moved on. Once the follower into the market, Amstrad is now leading its competitors into its own markets

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Computer Trade Association Magazine of the Year

ABC



PCW8512 in shops by end of March

AMSTRAD'S upgraded PCW machine, the PCW 8512, will be in the shops by the end of this month (see *Popular Computing Weekly*, February 6). Amstrad has now formally announced the introduction of the machine

The PCW 8512 is essentially similar to the existing model apart from the bigger memory, and the inclusion of a second disc drive, housed vertically in the monitor unit as standard, rather than an optional extra, as on the 8256

The second disc drive is a 1M unformatted, 720K formatted, double density device It can be used for writing and editing work, can speed up spellchecking to around 25 pages per minute, and enable immediate access to multiple programs

Amstrad's sales and marketing director, Malcolm Miller, asserts that the 8256 will not be dropped. "There has been a growing demand, both from retailers and customers, for a model with a greater capacity, and we have met this demand with the 8512 – it is an enhancement model, not a replacement," he said

The PCW 8512 will retail for £573 85

War on Want tape finalised

OFF The Hook is not the only charity compilation to be launched this spring War On Want has now finalised the titles for its own appeal tape, to be launched on April 21 (see *Popular Computing Weekly*, February 6)

As yet, War On Want has only planned for a Spectrum version, but hopes a Commodore tape will follow The tape will cost £9 98

The titles are *Spectrum Chess II* (Artic), *Bug Eyes* (Audiogenic) *Pedro* (Beau Jolly, originally Imagine), *Winged Warlord* (CDS), *Mr Freeze* (Firebird), *Headbangers Heaven* (Llamasoft), *Wizard Warrior* (Mastertronic), *Hellfire* (Melbourne House) *Hunchback II* (Ocean), *Horace and the Spiders* (Psion), *Xavier* (PSS) *Rupert and the Ice Palace* (previously unreleased, from Quicksilva), *Cybernauts* (Star Dreams) and *Dr Franke and the Monster* (Virgin).

All proceeds will go to War On Want, whose primary aims are to help alleviate poverty and famine in the Third World.

Compunet goes for the Quill

COMPUNET is now offering *Quill*ed adventures for sale as telesoftware on the network

The Commodore database will give technical help to those who want to write an adventure for sale It then selects the best, incorporates protection and they can be downloaded by members for between £2 and £5 per game

The first adventures to appear in Quill Corner are *Parisian Nights*, the story of an adventurer seeking somewhat risque relaxation in Paris, and *The Staff of Law*, a more serious adventure.

Details from Compunet at 7-11 Minerva Road, London NW10 (01-965 8665)

Atari CP/M

◄ continued from page 1

designed to compete directly with Amstrad's PCW range

The CP/M emulator is a software package which Atari claims will be fully compatible with Digital Research's Z80 operating system Rob Harding, Atari UK's marketing manager, said "We are negotiating with manufacturers to convert their programs on to 3½ inch discs."

The IBM PC emulator will be a hardware package comprising an Intel 8088 processor, with 512K of Ram It will accept a 5¼ inch disc drive, and the whole unit, when being used in ST rather than IBM mode, will act as a separate 500K disc drive "It is not our intention to downgrade the ST into an IBM clone," said Sam Tramiel, Atari's president "It means that the business user will able to complement the ST range with IBM software" Sam Tramiel put the degree of IBM compatibility achieved by the emulator "in the high 90s per cent".

The CP/M emulator should be available from next month. Its price is expected to be around £40-£50 Atari plans to release the IBM emulator in the summer at around £300

Sam Tramiel has also made announcements about Atari's plans for the low-cost word processing market currently cornered by Amstrad. "In late 1986, we will introduce a word processing package with a monitor and printer, based on our 8-bit line I'm amazed by what Amstrad has done in this field in this country."

The 1040 STF

Exact prices have also been announced for the new STs The 1040 STF with a monochrome monitor will retail for £916 85 and with a colour monitor, £1148 85 The low end 520STM (to be sold without disc drives included) will cost £399 A price has not yet been announced for the 520STFM, the STM with inbuilt disc drive, which will be launched in about a month's time The 520STM and 1040STF should be available now

On the subject of future ST machines, Sam Tramiel declared, "We plan to enhance the STs with a graphics chip, and speed it up There will be a blitter for the 1040 And the one megabyte is just the beginning – we'll go for two megabytes, then four megabytes "

Minter takes on first Atari show

JEFF Minter's faithful following was out in force to see his latest creation, *Colourspace* on the Atari ST, at the first ever Atari Computer show, held last week-end at Novotel, London

Also attracting massive attention was, of course, Atari's own stand, which featured its new STs (see separate story) and the latest video games machine, the £70 7800

Entertainment packages for the ST were few and far between, although Psygnosis took a stand to show off *Brataccas*, and Level 9 showed a pre-production of *The Price of Magick* on the machine Level 9 plans to convert all its titles to the ST eventually, with *The Price of Magick* appearing first in a couple of months.

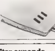
However, there were a number of languages and utilities on display, notably Metacomco's language range, utilities from Microdeal and Kuma, and Prospero's Pascal and Fortran implementations

Users of Atari's 8-bit had a feast of software and peripheral bargains to choose from.

Megamouse for BBC machines

THE Megamouse for the BBC B is a follow-up to Wigmore House's WS2000 mouse pointer

Software available for the Megamouse includes *Cadmouse* a computer design package utilising icons, and including several features such as arcs to exact degrees, polygons, ellipses and dimension lines, and *The Artist*, a flexible and versatile art packages with a wide range of colour and pattern options



Wigmore House is considering conversions for the Commodore 64. Meanwhile, on the BBC, the mouse costs £67 85, *Cadmouse* £29 90 and *The Artist* £56 35

Further information from Wigmore House at 32 Savile Row London W1 1AG (01-734 0173)

Productivity titles from Ariolasoft

ARIOLASOFT has launched a new range of 'productivity' packages, licensed from US company Batteries Included The first in this series is *Degas* (see *Popular Computing Weekly*, February 6), a graphics program for the Atari ST

Other titles in the range, which should now be available, are *Homepak*, an integrated system comprising a word processor, database and telecommunications software, *The New Consultant* a database management package, *New Paperclip*, a professional word processor, and *Cut and Paste*, a particularly use friendly word processor

Homepak (£34 95) is available for the C64/128 Atari 800, Apple II and IBM PC (disc only), *New Consultant* for the C64/128 (£44 95) and IBM (£59 95), *Paperclip* for the C64/128 and Atari 800 (£44 95), and *Cut and Paste* on twin disc for the C64/128, Atari 800, Apple II and IBM (all £24 95)

Star expands printer range

STAR Micronics has now introduced the next in its N printer series, following the launch of the NB-15

The new NL-10 is a dot matrix printer, which runs at 30 cps in NLQ mode and 120 cps in draft mode Interface cartridges are available for the Commodore 64/128 IBM PC and Apple IIc

The NL-10 will replace Star's SG-1 0 and SG-10c models

The NL-10 costs £274 85 and its interface cartridges are £44 85

Elite drops Basketball

ELITE's well-advertised game *International Basketball* has been dropped by the company This is the second time Elite has abandoned a game after development work had begun.

Scooby Doo for the Spectrum was similarly dropped, although work on a completely different game based on the Scooby Doo character has now restarted

Firebird's comet

THE latest title in Firebird's Hot range is *The Comet Game*, timed for launch at the end of the month when the space probe Giotto sends us the closest view of Halley's comet yet

The game involves a mission to save humanity from germ bugs infecting Halley's comet and threatening earth

It will cost £7 95 for the Spectrum, Commodore, Atari (8-bit) and Amstrad ranges

Letters

Kempston replies

Kempston Micro Electronics wishes to point out certain inaccuracies in the inside lead article of the March 6 issue, re joystick interfaces and the Spectrum 128, which Kempston feels are extremely misleading.

It appears that a problem arises from a small number of software titles using a certain programming technique in conjunction with Kempston *compatible* interfaces. The problem can be solved by software modification and a number of software houses are effecting these changes.

The Kempston joystick interface standard is not incompatible with the Spectrum 128 and will continue to be used by software houses for joystick compatible games. The problem appears to affect most Kempston compatible interfaces and we feel that the company has been implicated in a problem which affects a number of manufacturers.

Ab Pandaal
Managing Director
Kempston Micro Electronics

Dream machine

The advent of true 16-bit computers is likely to be the next important development in the home/personal computer market. The dramatic increase in speed, addressable memory and raw computing power when compared to the tired old Z80 and 6502 chips is astounding.

In computers like the Amstrad 6128 and the Commodore 128 these chips have reached their maximum potential and for the market to progress 16-bit computers must become the norm.

I am, however, worried at Commodore's lack of foresight and impressed by Atari's new-found muscle. While the 520ST represents a step forward in computing technology, it is the Amiga that is undoubtedly a leap into the future.

Anyone who has heard anything of this computer cannot fail to be impressed by its speed, the graphics, sound, multitasking, etc. What bothers me is the 'business' market Commodore is aiming the machine at. Surely the Amiga's facilities are best suited to the home market for recreational and educational use?

Commodore seems to have produced a dream machine for the home enthusiast but intends to sell it to an already overloaded business market where stereo sound sampling counts for little.

I, for one, wish Commodore every success because success can only mean price cuts which may bring the Amiga down to a price level that I and many others will be able to afford. In the meantime I'll carry on saving for an Atari ST.

David Shaw
Wokingham
Berks

Many others share your opinions and fears. It should be remembered that the Amiga Corp, before Commodore's acquisition, designed its machine as the ultimate entertainment computer. In the meantime, a Commodore loss looks like Atari's gain.

Where is Phil?

I am curious to know what has happened to Phil Rogers and his Peek & Poke column which has apparently disappeared from your pages.

It seems to me that ever since the amalgamation of *Popular* with *Home Computing Weekly*, dear old Phil has been given the proverbial boot! I am still awaiting for a reply to a query of mine, despatched some few weeks ago, with which I enclosed a SAE.

Could you therefore resurrect the old fellow long enough for him to get his Quill scratching again?

In all seriousness, though, I do hope that Peek & Poke has not been sidetracked, for I thought that it was a good aid to duffers like me, and a very interesting and important part of your magazine.

Les Rothera
30 Burnsall Gardens
Leeds

MSX club

I wish to inform your magazine of a new MSX Club. The club will cost £5 to join, and for that fee, a regular magazine will be issued. It will contain competitions, reviews, hints on playing games, hi score table, top ten games and many other articles featuring the up and coming MSX.

The magazine will be issued eight times a year. That is one magazine every two months, and two special editions for Christmas and Easter. The special editions will contain 60 pages.

We have also written to *MSX Computing*, *What MSX*, *Computer and Video Games*, and a number of software companies which include, Konami, Activision, Ocean, Kuma, and Hal. We are awaiting their replies.

P J Morgan
The MSX Club
230 Dunvant Rd
Dunvant
Swansea

A good choice

I read Mr D J Parrott's letter (February 20) referring to the concern about David Kelly's Ziggurat on the QL (February 6).

To my mind the Ziggurat article was extremely shallow as regards the QL's capabilities, but also has reference to the reasons Americans buy machines.

In my experience, having worked for Americans the last 10 years, I have found that they firstly buy a machine to support their job needs and only secondly for entertainment purposes.

It is easy to dismiss the QL, especially given the clumsy way it was introduced, but the fact remains that the bundled Psion software represents remarkable value for money.

There are different machines for different needs, but for the serious personal or small business user, the QL is well supported and a good choice.

Alan Essex
Oxted
Surrey

That's enough David Kelly Ziggurat letters. Ed.

A bad week?

Re *Movie*. I have to disagree with the Pick of the Week status bestowed on this game.

Whilst the idea behind the game is a nice one, the execution is not really up to 1986 standards. The 'clip clop' footsteps sounds accentuate the jerky movement rather than concealing it, as I suspect it is supposed to.

Tanya is never found in the same location twice and it is apparently random whether Harlow gets shot as soon as he enters an occupied room or not. The absence of a *Save* facility or multiple-lives necessitates re-negotiating all the rooms progressed through up to the time of demise.

As an arcade adventure it is, in theory, an improvement (to an adventure game player) than the 'fast action zap 'ems', but it gets very tedious.

The graphics are so appalling that it is difficult to distinguish between portable objects and furniture. The sight of bouncing dogs, floating armour suits and girls suffering, apparently, from St Vitus dance, raises a smile which quickly turns sour.

The icon system is the clumsiest I have seen. Try turning to face an opponent, then hitting/shooting him. Even once the objects are located – what are they? Is this the state of things to come or was it just a bad week? If so does anyone want to swap a computer for a pair of knitting needles?

Hugh Walker
Burpham
Guildford
Surrey

Well, we liked the clip clops, found the graphics small but rather stylish and so on ... aren't personality differences wonderful?



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Communications

Hints and Tips

This week I'll continue my hints and tips for using Bulletin Boards

When you log on to a BB it is best to use your real name not a pseydonym unless you are told you can. The reason for this is that some Sysops keep a list of the people who log on which they can show this to sponsors

Telesoftware

Many BBs have a section where users can download software in their own computers called telesoftware. Programs on telesoftware are referred to as public domain software which is free, no-one makes money from people who download public domain software. If you plan to download software then you should, but don't have to, upload some software to the board. You can upload software which you yourself have written. This isn't compulsory, but if nobody gives the board some software then there will be none to be downloaded by others!

Some boards have a 'help' section. When you first log on you should read this carefully and if you have a printer then print a hard copy of the help section so you can refer to it when you need to. Typing a hard copy can save money

If you stay logged on to a board for too long this will prevent others from logging on and most of you will know that it gets very boring if you are spending hours trying to get logged on to one particular board and it always seems to be engaged. To help things along, some boards give you a time limit

Breaking up

You should never just break the line to a board, ie, don't just press *Break* or *Stop* on the computer – always go through the proper logging off procedure. If it happens by mistake then it is likely that the host computer will assume that you are still on line

If this does happen then the BB will be engaged for some time, since it assumes that you are still on line and it can't tell otherwise. All Sysops know that this can happen by accident at times, but only once or twice a month not every day. Also the Sysops can tell who is on the line when this happens and if the same person does this a lot then they are likely to be denied further access to the board

Some people assume that they can save money by just breaking the line. This is true, after all, you are on-line for at least five seconds while going through the logging off procedure. But what's a couple of pounds a year if it will keep you allowed to log on to a board and keep the Sysop happy?

This week's BB top ten is another of my own concoctions

Top Ten

	Name	Baud Rate	Number
1	Bluelips	300/300	0843-32637
2.	Micro-gnome	1200/75	01-888-8894
3.	CCBB	300/300 Ring Back	0249-817077
4	Marctel	300/300 & 1200/75	01-349-7150
5	TBBS – London	300/300	01-348-9400
6	Vulcan board	300/300 & 1200/75	0268-46691
7	Dark Crytal	300/300 & 1200/75	01-954-9647
8.	Commun-ITEL	1200/75	01-968-7502
9	Metrotel	1200/75	01-941-4285
10	CBBS – SW	300/300 & 1200/75	0392-53116

An update on the Calne Computer Club board mentioned last week, it now operates on a ring back basis. The number's 0249-817077

The new BB this week is Teletrieve in Huddersfield, 300/300 baud but I don't know the hours (probably 24). The number ois 0484-057299

David Wallin

If you have any queries, tips or comments to make about any aspect of micro communications, David Wallin would love to hear from you.

Write to him at *Popular Computing Weekly* 12-13 Little Newport Street, London WC2H 7PP.

The Rogue Program



Package deal

Eric Daghaye checks out the new Commodore machine the 128D

Commodore's version of the 128 with a built-in disc drive has been promised for nearly a year now. Many people must have been wondering if it would ever appear when it quietly launched at the *Which Computer?* show last month in the shadow of the Amiga's graphics.

I would class the Commodores 128 and 128D as a clever combination of technology and marketing, as they are three computers under the same bonnet and quite immune from the 'new computer syndrome': lack of software. It claims to be able to run all the 64's software and most CP/M 3 software. This must be the first time that a computer is launched on an already existing immense software base.

With the 128D what you get for your money is a very nifty looking three box system consisting of the main unit which contains the disc drive and all the electronics, a separate keyboard connecting to the main unit via a lead, and a high resolution monochrome monitor. The whole thing looks very impressive, much more like a business computer than a home computer, with a general look reminiscent of the Amiga. The disc drive, moreover, is the double sided 1571, rather than the single sided 1570 which is available for the C128. It is still unclear whether Commodore intends to bring out the 1571 as a separate unit for the C128.

Another interesting feature is the 128D's apparent portability. Unlike the non-disc version that has to be dismantled and carried as a bunch of separate bits (realising later that you forgot the power pack), the 128D's design has taken portability into account.

Turning the main unit on its back reveals a gap into which the keyboard clips neatly, and there are a couple of 'hooks' on to which the cables, only two of them – mains and monitor – hook on the back. The nice touch is a handle that pops out from the side of the main box, making it very easy to carry around.

Taking the lid off any Commodore machine voids the warranty, which was not much of a problem on the previous models if you had a decent screwdriver. But the 128D is held together with soft-head screws, so no matter how good your tools are, you will not be able to open the case without damaging the screws and blowing your warranty.

64 Mode

The 128's major claim is full compatibility with all existing C64 and CP/M software. After going through a few dozen discs I have found out that 98% of my 64 software did work without problems. The 2% failure consisted of a few games, mainly cassette based, which must use some obscure area of the memory, and disc utility programs. I suspect that these do not work because of the slight difference in the 1541 and 1571 Dos. I also noticed that some programs that apparently did not load started to run after I tried to reset the computer.

On the subject of reset, the standard 128 reset switch is on the right hand side of the main unit, and alongside it, hidden in a small hole is a very handy disc drive reset switch.

128 Mode

At power-up the disc drive performs a small routine to check if a program has to be autobooted (like the CP/M system disc), else it defaults to 128 mode with basic 7.0 in whatever screen size is selected.

The new Basic is quite a treat; it includes *If-Then-Else* and other 'structured' commands such as *Do-Loop-While-Until*, but does not have procedures. Also included are much awaited sound and graphic commands – including windows and split screen facility – that are both easy to use and comprehensive, a sprite editor, a machine language monitor and a whole set of disk commands such as *Director*, *Dload*, *Dsave*, *Scratch*. Also the function keys are preset to much frequently used commands such as *List*, *Dload*, *Dsave*, *Run*, *Directory*, *Monitors* and can be easily redefined to suit your needs.

Although the manuals supplied with the system break a life long Commodore tradition, in that they are genuinely useful, there are a lots of not so well documented features that make the 128 mode very interesting. For example the clock speed can be doubled with the command *Fast* and brought back to normal with *Slow*. Although *Fast* works only in 80 columns, this can be very useful where the processing speed can be doubled for number-crunching and then brought back to normal for display. Other such freebies include alternative cursors and flashing displays.

I also have recently discovered that Pet Basic programs will load and run from disc without any major alterations, something that was not easily done on the 64.

At the moment there is not a great deal of software specific to the 128, mainly a few business programs such as word processors and databases. I use Precision's *Superscript 128*, and Commodore's *Script* is actually a trimmed down version of *Superscript*.

The advantage of having 80 columns to do word processing and programming are fairly obvious, one does not need to pan the screen left and right to view a whole document.

The monochrome monitor

The monochrome monitor is actually a green screen and its resolution is very good, giving in the 80 column mode a serious look to the machine. My original



intention was to do without the monitor and buy one of these 'interfaces' with the 128 and carry on with my good old 1701. Well, no matter how tempting the interface's manufacturer promises are, the 1701 has a rather poor resolution, and any form of 80-col on it is almost impossible to read.

CP/M mode

And then there is CP/M What it is is a standard environment in which programs are written and run.

In theory programs written under CP/M on any machine should run on any other CP/M machine

In practice it is true up to the point of disc formats as each manufacturer has opted for a different format A lot of home micros now offer CP/M but only in their own format.

This is where the 128D scores another point as it can read most CP/M format including Osbourne, Kaypro, Epson and IBM (files only, not programs) both single and double sided I have been successfully running *Dbase II* in Osborne format, utility programs in Kaypro IV format, and many others

The trick behind this useful feature resides in the disc drive As a disc is read the drive can detect what format it is and let you either read the one file only or lock into that format for further use

If the disc is changed it will automatically detect the new format

This is also true for discs formatted in 64 or 128 mode If you use a single sided disc, after some whirring, the drive will adjust itself to cope with it Change to a double sided disc and it will re-adjust again.

According to the manual, the drive is also capable of formatting discs in most major CP/M formats.

As CP/M is one of the first operating systems for micro-computers, there is a lot of software available for it And most of it is public domain software which means that it is free! The fact that it is free does not mean that it is poor quality software, far from it. There are at a rough guess 20,000 programs falling into this category, and they include games, languages (compilers and interpreters), utilities, business programs . The software is free but there is a copying fee of £2 per disc, and a disc may contain up to 50 files

For example a 'C' compiler comes as a set of three discs (this includes the manuals as text files on the disc), bringing the total cost to £6 00. It makes you think twice before spending £120 for the C64 version of C

Such software can be obtained from Rod Smith at the Public Domain Software Internet Group (PD SIG). To get more information, send him a SAE at 136 Holtye Road, East Grinstead, Sussex, RH19 3A.

Conclusion

I have not been able to fault the 128D yet The merits of the 128 have already been laid out in other reviews, but the 128D is made more interesting with its extra features

It is a neat self-contained serious looking system devoid of the rat's nest of wires usually associated with home computers The fact that the keyboard is separate means a lot of flexibility over one's working position

The double sided disc drive included has a larger capacity (320-340K), is much faster and more CP/M standardised (very few CP/M formats are single sided) and last but not least it is portable It is slightly dearer than its counterpart, at £499 for the 128D without monitor and £574 with the monochrome monitor

This computer will appeal mainly to existing 64 owners who want to upgrade to a better machine whilst still being able to use all their software and small business users who want a professional looking system without having to spend a fortune on software And C64 users, who are thinking of graduating to a 128, should take a good look at this version It might be well worth the extra few pounds

Name: Mike Singleton

Author of Lords of Midnight

I learnt programming on my first computer – a Commodore Pet, that was in about 1978. The manual, which was a bit pathetic, taught me Basic but after about three months I started fiddling with machine code which I picked up after buying the Mostek handbook.

I wrote some games for the Pet which were put out by Petsoft. I'm still quite proud of the first one, *Space Ace*, which featured full scrolling and wrap-around routines I had developed. I moved to the Z80 processor when Petsoft was in negotiation with Sinclair to do programs for the ZX80. Later I was invited to do programs for the ZX81. The games I did became *Games Pack 1* – I got £6 000 in royalties, which given that I'd only spent a few weeks on them, was one of the best programming tasks I ever had.

I then did a number of games for the Vic 20 for Postern and finally after some discussions with Terry Pratt about some ideas I had for a landscaping game called *Lords of Atlantis*, the game *Lords of Midnight* was born in April 1984.

I found that once I'd mastered one processor, working on the others became relatively easy – just a matter of learning the details of the instructions. When I work I mostly use my own routines running on the host machine. The only commercial programming tools I tend to use are a couple of assemblers – Picturesque's on the Spectrum and Commodore's own for the 64. I also develop a lot of the graphics using the Grafpad graphics tablet.

The way to learn machine code depends very much on your personality, I think. The important thing is just to start with very short simple routines – screen handling tasks are best because you can see any result and may even find a use for them in your games.

Of the programming I've done I still think that landscaping is the thing I'm most proud of, particularly turning the routines into 'action scaping' for *Quake Minus One* so that you could actually move into the distance. If I had the hardware I'd like to create an abstract stategy game.

Name: Mike Singleton
Age: 35

Favourite Programs:

I don't play games much but I like Beyond's *My Chess II*, though *Rockford's Riot* was also good. I also still play *Doomdark's Revenge* – I still haven't managed an overwhelming victory!

Favourite Machines:

Probably the Amstrad 6128 – for the price you get an excellent screen display, a disc drive and a reasonable sound chip. I'm also enthusiastic about the Atari ST.

Softography

Space Ace, *Games Pack II*, *Siege*, *Shadowfax*, *Snake Pit* (last three by Postern originally for Vic20), *3D Space*, *Lords of Midnight*, *Doomdark's Revenge*, *Quake Minus One* (I also developed a couple of play by modem/mail games in that time *Star Lord* and *Star Net*)

Hobbies

I used to make home movies – I may get a video and start that again. I also read a lot, anything from science fiction to Le Carré to D H Lawrence

Out of time

Program *Time Tunnel* **Micro** Commodore 64 **Price** £8.95 **Supplier** US Gold, Unit 10, Parkway Industrial Estate, Heneage St, Birmingham.

At first glance you could be forgiven for thinking that *Time Tunnel* is just another arcade adventure program using the now time honoured technique of find object, use object, continue to next puzzle variety, but, it is actually a clever game with some original ideas.

OK the plot is a bit thin – you are a gnome and prime contender to the throne. To prove your worthiness to be King you have to recover the seven pages of a very important book that some nasty has scattered throughout time, and decipher the completed message to free your imprisoned fellow gnomes.

Using the time machine at your home base in Gnome Mansion, you can visit each of the seven time zones at will, explore and return whenever you wish. This is what makes the game flow so well, you're not trapped anywhere desperate to find a way out. You can, if you find yourself frustrated at one zone, merely journey to another and try your luck there. There are some lovely effects like the shadows cast on cave walls from your flickering torch, or the vibrating time machine as you begin your visits. Another plus for this game is the variety of screens at each time zone. There are a generous number each with its own distinct graphics.

As you can gather, I enjoyed this game despite some frustrating elements like one way doors and fussy sprite handling, but it does have variety and most importantly – playability.

Andy Moss

Time to kill

Program *Borrowed Time* **Micro** Commodore **Price** £14.99 **Supplier** Activision, 15 Harley House, London NW1

Dateline 1934 – Scene, the office of Ace Private Eye Sam Harlow. There you are, feet on the desk, having just finished your last case after discovering the fact that Maltese Falcons weren't a brand of cigarettes after all, when your phone rings. A familiar voice gasps out a warning "Sam, they're after you – they want to kill you". The tone of a dead phone assaults your ears and you realise that you're on your next case. Who wants you dead? You're such a nice guy!

So begins a new adventure from the people who produced *Mindshadow* – a tale that achieved a lot of success, notably for its great graphics and strong plot. *Borrowed Time* is even better, with one of the most exciting openings to an adventure I've seen. Right from the off, you're being chased by a couple of thugs with shooters and a lot of quick thinking is needed in order to escape. Suffice to say, I got killed quite a few times before the penny (or is it dime?) dropped and I managed to escape them.

The screen display is completely from *Mindshadow*, being that the graphics (which are every bit as good) only take up a third of the screen.

The rest is taken up with the text and an interesting set of key words which by the moving of your joystick cursor can select two word phrases to use instead of typing them out. This is very useful when moving about as the compass can also be joystick controlled.

It's an adventure that you need to *Examine*, look at and listen to at every opportunity, and there are objects in the graphics that won't be mentioned in the text. It seems unlikely that this game will be converted to tape as, unlike *Mindshadow*, locations have to be revisited and there is a much larger vocabulary present. So, disc access is a must I am afraid but, if you have a disc drive, *Borrowed Time* will have you at your keyboard for hours. Don't miss this one. Highly recommended.

Andy Moss

Divided

Program *Citadel* **Micro** QL **Price** £10.95 **Supplier** Eidersoft, The Office, Hall Farm, Ockendon, Upminster

Do you remember Medic? That ill fated QL company, with four free games for disc customers.

Eidersoft has taken one of those original titles *Citadel*, taken all the bugs out and slapped a price of £11 on it. Now it forms part of its Budget range.

Your part in this game is to collect up as many objects as possible scattered across the area, in various guises. The area is a space station that is politically divided like modern day Berlin and you have to unite the divisions.

The controls are simple, rotate 45 degrees on one button, go forward on another and stop on the space.

If you forget that this game was once free, then you are left with a reasonable package that is a little overpriced.

Matthew Palmer

Choo Choo

Program *Orient Express* **Micro** Enterprise **Price** £7.95 **Supplier** Entersoft Limited, 37 Bedford Square, London WC1B 3HW

Why do I find this so addictive? It's not a simulation, like *Southern Belle*. It's not a Poirot-style adventure. It's a block shift game. You know the type – slide around parts of a picture, using one empty space for manoeuvre.

The excitement in *Orient Express* comes from a speeding train. No, not even a speeding train but a chugging tank engine. The point is that the train advances relentlessly along the track until it reaches the block shift grid of lines more tangled than Clapham Junction.

The train can be halted for a maximum of a minute while you rearrange the blocks to form an unbroken path to the exit point, trying to pass through bonus coal and water squares en route, and though the first stage from London isn't too difficult it becomes more of a panic as you enter the Continent.

Hardly an original game, but it's bright and clear with superb 'train' music, and if you prefer to use your Enterprise for strategy rather than wholesale slaughter it's probably a good, if rather expensive, buy.

John Minson

High speed

Program *Supercharge* **Micro** QL **Price** £59.95 **Supplier** Digital Precision, 222 The Avenue, Chingford, London.

Being able to convert your own QL Super Basic programs into neat machine code, by means of a compiler, is probably the best professional applications package available for any serious Basic programmer.

Digital Precision has spent over eight months writing such a compiler for the QL and the quality of this package speaks for itself, when one sees how easy it is to use, and the results after compilation.

Security on it is, not surprisingly, high, therefore stopping effective microdrive to microdrive cloning.

The specifications of this program are extremely impressive. It will do all QL SuperBasic operations as standard, including Graphics, Arrays, Arithmetical operations, String Handling as well as the all important loops. It will also do a number of things that the QL interpreter cannot do such as multitasking and error correction.

The manual that accompanies the program is fully comprehensive and gives detailed descriptions of all the error reports to the user in easy English.

If you are a Basic programmer wanting to speed up your work and you do not know 68000 machine code or you do not want to waste your time doing tedious debugging in Hex, then this is the solution.

Matthew Palmer

Compiled

Program *CBasic Compiler* **Micro** Any Amstrad with disc **Price** £49.00 **Supplier** Digital Research, Unit 12, Fanton Way, Southfields, Basildon, Essex.

The CBasic compiler is the only one of the four recent Digital Research programs that will run on CP/M 2.2 as well as CP/M Plus, but those who have CP/M Plus will also be able to use the GSX Graphic system.

CBasic is an implementation of Basic that has its weaknesses and also some very admirable strengths – an interpreted form of the language can be bought but the compiler version must represent the easiest way of preparing executable *.Com* files for use with CP/M.

You are not supplied with an editor – most text editors or word processors will do, or even another language editor provided you can save the result as an Ascii file.

CBasic is not quite as comprehensive as the PCW's Mallard Basic but it is possible to define your own extensions and it is extremely strong on structured elements.

To allow full exploitation of these structured elements it is possible to compile functions and blocks on their own and chain them into other programs. When you get used to them these features are a joy to use.

It must be said that DR's languages are not renowned for their speed and this is disappointing for a compiled language. However, the compilation helps enormously with the ease of use under CP/M and the program has much to recommend it.

Tony Kendle

In a spin

Program *Spindizzy* **Micro** Amstrad **Price** £9.95 **Supplier** Electric Dreams, 15 Harley House, London NW1

First of all there was *Marble Madness*, then *Gyroscope* which, for me, was one of the most frustrating, and addictive games of 1985. Well, now comes *Spindizzy* from Activision and, make no mistake, this is a winner. It has that strange slalom-like course from *Gyroscope*, but with a difference. Here you have solid 3D walls which your mobile can disappear behind. There are lifts, trampolines, strange moving shapes and compasses with mazes so fiendishly designed as to have you biting your lip with frustration.

The main object of the game is to find and collect energy jewels that are scattered around this strange new world hanging in space, using your Geographic Environmental Reconnaissance Land Mapping Device, commonly known as GERALD.

There is a map stored in memory which can be called up when necessary and any explored areas are coloured yellow, unexplored (of which there will be plenty) are coloured red. There are plenty of extra features which make this game so enjoyable to play. The viewpoint can be altered at any time (in order to see GERALD behind walls), there is a beginners section east of the start which allows you to experiment with different playing techniques, switches to activate and clues to find.

If you enjoyed *Gyroscope* – then beg, steal or borrow a copy of *Spindizzy*. You won't be disappointed – just maddeningly frustrated!

Andy Moss

Not flashy

Program *Pascal/MT+* **Micro** Amstrad 6128 or 8256 (CP/M Plus) **Price** £49.00 **Supplier** Digital Research, Unit 12, Fanton Way, Southfields, Basildon, Essex.

Although Digital Research cannot be regarded as saints or desperately keen to shave its profit margins, nobody can deny that it exceeded all expectations in the way it cut costs to help implement CP/M on the Amstrad machines (it's a pity it won't do the same for CP/M Plus on the DK'Tronics' memory boards).

DR Pascal is in direct competition with two other common CP/M implementations of the language, Hisoft's *Pascal* and *Turbo Pascal* from the American company Borland. The latter two have the advantage that they can be run under CP/M 2.2 for the 464/664 machines as well (although DR's *Pascal* can be used to produce object code that will run on these two machines).

To give a detailed rundown of the differences between the various Pascals would take pages. Just bear in mind that Hisoft's is cheap and cheerful – just £39 including a nice screen editor. *Turbo Pascal* is friendly, flexible, fast, easy to use and with a vast number of support programs including toolbox modules, special Amstrad graphics and sound extensions, pre-written modifiable source code for database programs etc. It costs £70 for the basic system alone and is *not* entirely standard.

The DR version is a very standard language – full ISO specification plus more (which makes the source code highly portable) and not surprisingly uses the CP/M operating system to its full advantage (although code can be produced that runs independently of the DOS). Debugger and disassembler options are provided. If you are interested in a serious system with nothing very flashy (or non-standard) this is a strong contender.

Tony Kendle



PRINT OUT

by E B Page

There are a number of occasions when a simple printer set-up routine is required giving a limited but useful number of options. One such use would be for printing out records held in a database where a few extra lines added to the program would give the user a choice, say, of NLQ or condensed print. Two other options would be margin settings and single, double or triple spacing.

The following program allows you to do just this and is easily written into your own programs as a Procedure – it is written for Epson compatibles, but can be easily converted.

Program notes

3-20	Demonstration program
30	DEFPROCdriver
40-60	Set margins (always count from the left)
70-90	Set spacing (single, double or triple)
100-110	Set NLQ (near letter quality)
120-190	Set other print styles
200	PROCprinter
220	DEFPROCprinter
230-280	All variables passed to printer
290-300	Demonstration print
310	Turn off printer

```
 3MODE7
 10PROCdriver
 20END
 25:
 30DEFPROCdriver
 40CLS:INPUTTAB(2,8)"How wide for LEFT margin"SPC(4),A
 50INPUTTAB(2,10)"How wide for RIGHT margin"SPC(3),B
 60IFA=0 AND B=0 THEN B=70
 70PRINTTAB(2,12)"Single,double,or treble"
 80INPUTTAB(2,14)"spacing 1), 2) OR 3)"SPC(8),g$
 90IF g$="1" THEN E=35 ELSE IF g$="2" THEN E=70 ELSE E=115
100INPUTTAB(2,16)"Do you want NLQ"SPC(13),A$
110IF A$="Y"OR A$="y"THEN C=40:D=0:PROCprinter(A,B,C,D,E):END:ELSE 120
120C=33:CLS:PRINTTAB(5,10)"Other types available are:"
130PRINTTAB(16,12)"1)Large,Double Strike"
140PRINTTAB(16,14)"2)Italics or"
150PRINTTAB(16,16)"3)Emphasised Condensed"
160REPEAT
170INPUTTAB(5,18)"Please select 1,2 or 3"SPC(70),K%
180UNTIL K%>0 AND K%<4
190IF K%=1THEN D=56ELSE IF K%=2 THEN D=0:C=52: ELSE IF K%=3 THEN D=22
200 PROCprinter(A,B,C,D,E)
210ENDPROC
215:
220DEFPROCprinter(z,x,n,m,l)
230CLS
240VDU2,1,27,1,64:        REM*Printer Reset
250VDU1,27,1,51,1,l:      REM*Line Spacing
260VDU1,27,1,108,1,z:     REM*Left Margin
270VDU1,27,1,81,1,x:      REM*Right Margin
280VDU1,27,1,n,1,m:       REM*Print Modes
285REM*Replace lines 290,300 with your own print instructions*
290IF m=56 THEN P$="Enlarged,Double-strike,Emphasised,Standard":ELSEIF m=
AND n=52 THEN P$="Italics":ELSEIF m=22 THEN P$="Emphasised Condensed":ELS
IF m=D THEN P$="NLQ"
300PRINT"This is an example of "P$" print,with the Left Margin set at ";z
and the Right Margin set at ";x", with a line spacing of ";l"/216in"
310VDU3
320ENDPROC
```



THIS IS
THE YEAR
OF THE
TIGER,
THIS IS
THE MONTH
OF THE
TIGER



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When you've cornered
the germ bags...
COMET
Firebird

Commodore 64



EXTENDED BASIC

by Eric Deghaye

There are a lot of people who complain that the Basic on the Commodore 64 is one of the worst there is, ie, it does not have any commands built-in to control its excellent sound or graphics facilities, or has an 'unstructured Basic' (meaning really that it is not a Pascal or BBC clone)

However that simplicity can be a plus for writing extensions. Countless such extensions have already been written, but there is one snag: the software you write using these will only work with the extension present

What I will be explaining over the next three weeks is a way of writing your own extensions that can be generated by the program that requires them. But first we must have a look at how the Basic actually works

Let us first have a look at an excerpt from the interpreter at where it examines a Basic statement and executes it.

A7E1 JMP ($0308)
A7E4 JSR $0073
A7E7 JSR $A7ED
A7EA JMP $A7AE

The first line is very important for us. The address stored in $0308-0309 normally is $A7E4, but it can be easily changed to point somewhere else

The following command gets the next character/command from the Basic text, the routine at $A7ED executes that command (or returns an error message) and the last line points back to the interpreter loop. We can tap into the Basic quite easily by changing the address contained in $0308-0309 to make it point to our routine

So how do we write our own commands? We first need to get the next character from the basic text by calling the routine at $0073. This will store its ASCII code in the accumulator (numerical values cannot be obtained that way, more about it later). We then compare it to the syntax of our command and if the two match, we jump to our routine then return to the interpreter loop. If the command does not match, we need to return to the interpreter loop before the execution point as it may be a Basic command. Have a look at the program 'Part 1' below. After assembling it and initialising it with Sys 12*4096, or running the Basic program, every time a '!' followed by a carriage return is entered, the border colour will change

We can of course include the recognition of more than one command using the same sort of algorithm as in the listing 'Part 2', but things start getting complex: we will end up with a messy program, difficult to understand and change

'Part 2' is fine as it is, but if we were to include 20 more commands, we will end up with rubbish. More about that next week.

```
!------------------------------------------
! BASIC EXTENSION --- PART 1
!------------------------------------------
!
VECTOR      = $0308            !INTERPRETER LOOP VECTOR
GETVAL      = $0073
*=$C000

!------------------------------------------
  RESET THE INTERPRETER LOOP VECTOR
!------------------------------------------

            LDA #<CHECK
            STA VECTOR
            LDA #>CHECK
            STA VECTOR+1

            RTS

 ------------------------------------------

CHECK       JSR GETVAL         !GET NEXT BASIC TEXT
            CMP #33            ! IS IT AN EXCLAMATION MARK
            BEQ ROUTINE
            JMP $A7E7          !IF NOT BACK TO LOOP,BEFORE EXEC
!------------------------------------------
  IF THE PROGRAM REACHES THIS POINT, WE THEN MUST HAVE THE
!CORRECT CHARACTER SO CARRY ON
!
ROUTINE     INC $D020          !CHANGE BORDER COLOUR
            JSR GETVAL         !IMPORTANT
            JMP $A7AE          !BACK TO LOOP, AS AFTER AN EXEC

!
!
!------------------------------------------
```

```
!------------------------------------------
! BASIC EXTENSION --- PART 2
!------------------------------------------
!
VECTOR      = $0308            !INTERPRETER LOOP VECTOR
GETVAL      = $0073
*=$C000

!
!------------------------------------------
! RESET THE INTERPRETER LOOP VECTOR
!------------------------------------------
!
            LDA #<CHECK
            STA VECTOR
            LDA #>CHECK
            STA VECTOR+1
            RTS

!------------------------------------------

CHECK       JSR GETVAL         !GET NEXT BASIC TEXT
            CMP #33            ! IS IT AN EXCLAMATION MARK
            BEQ BORDER
            CMP #38            !IS IT A &
            BEQ SCREEN
            JMP $A7E7          !EXIT TO BEFORE EXECUTE
!
 ------------------------------------------
!
BORDER      INC $D020
            JSR GETVAL         !IMPORTANT
            JMP $A7AE          !BACK TO LOOP, AFTER EXECUTE
!
!------------------------------------------

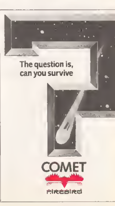
SCREEN      INC $D021
            JSR GETVAL         !IMPORTANT
            JMP $A7AE
 ------------------------------------------
```

```
10 REM PART 1 BASIC
20 BASE=12*4096: INC=0
30 READ A
40 IF A=-1 THEN 1000
50 POKE BASE+INC,A
60 INC=INC+1:GOTO 30
100 DATA169,11,141,8,3,169,192,141,9,3,96,32,115,0,201,33,240,
      3 76,231
110 DATA167,238,32,208,32,115,0,76,174,167,0,0,0,-1,-1
1000 SYS 12*4096
```

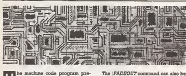
```
5 REM BASIC PART 2--
6 :
7 :
10 BASE=49152:INC=0
20 READ A:IF A=-1 THEN END
30 POKE BASE+INC,A
40 INC=INC+1:GOTO 20
100 DATA169,11,141,8,3,169,192,141,9,3,96,32,115,0,201,33,240,7,201,38
110 DATA240,12,76,231,167,238,32,208,32,115,0,76,174,167,238,33,208,
      32,115,0
120 DATA76,174,167,-1,-1
1000 SYS 49152
```



THIS IS
THE WEEK
OF....
"THE WAY
OF THE TIGER"
from GREMLIN
GRAPHICS
out this week!



The question is,
can you survive
COMET
FIREBIRD



BASIC COMMANDS

by Brian Cadge

The machine code program presented here adds two new RSX commands to Basic and is suitable for use on any of the CPCs The two new commands allow you to 'fadeout' a screen, or 'mix' one screen into another.

Each byte of the 16K screen is randomly replaced with a byte from the stored screen which is to be displayed. The Random Number algorithm used only returns each screen address once in the cycle, so the whole process takes only about two seconds. The result is very effective and can be used in games, video titles, or any other program which needs one screen to be replaced with another.

The first new command is *|FADEOUT*, which resets each byte of the screen to Ink 0, in a random order, giving the effect of the screen fading out.

The *|FADEOUT* command can also be followed by a delay value, for example, *|FADEOUT,100* to slow down the process. If no value is given then zero is assumed.

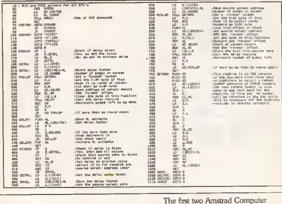
The second new command is *|MIXSCN*, this takes a screen stored in memory and 'mixes' it onto the display, that is, replacing a byte at a time in a random order, until the full 16K has been replaced *|MIXSCN* must be followed by the address of the stored screen in memory As the machine code starts at 40000, the highest position a screen can be loaded into is 23616, so the command here would be *|MIXSCN,23616*. Once again, the optional delay value can be given, as in *|MIXSCN,23616,100*

To load a screen into the lower memory, first save it from the normal display with *SAVE "SCREEN",B,49152,16384,0*, then to load back in use, *MEMORY 23615:LOAD "SCREEN",23616* Of course, all this would be done from within a Basic program.

To use the program type in the Basic Loader program, save and run it. The program will report if any errors are found in the data statements

The assembly language listing is included for users with access to assemblers, and to show how the program works For users with 128K memory, it would obviously be nice to be able to store the screens to be mixed in the second bank of Ram. It would be very easy to convert the program to access the second bank, by adding a few lines before and after Line 570, which is where a byte is loaded from the source screen The whole listing is fully commented and so should be very easy to follow

```
10 'FADE/MIX for all CPC's Basic Loader
20 MEMORY 33999
30 FOR i=40000 TO 40202
40 READ a$:v=VAL("&"+a$)
50 cs=cs+v:POKE i,v
60 NEXT 1
70 IF cs<>21606 THEN PRINT"DATA ERROR - Check listing";CHR$(7):STOP
80 CALL 40000
90 CLS:PRINT"|FADEOUT and |MIXSCN commands loaded,   You can now NEW
this Program."
100 END
110 DATA 01,4A,9C,21,11,9D,CD,D1,0C,C9,52,9C,C3,9B,9C,C3,60,9C,4D,49,
50,53
120 DATA 43,CE,46,41,44,45,4F,55,D4,00,FE,01,20,05,21,00,00,18,06,DD,
6E,00
130 DATA DD,66,01,22,0D,9D,11,00,40,CD,DA,9C,7C,E6,3F,67,01,00,C0,09,
36,00
140 DATA CD,00,9C,1A,7A,B3,20,E0,C9,E5,2A,0D,9D,7C,B5,28,83,2B,18,F9,
E1,C9
150 DATA FE,02,20,0C,FE,01,C0,21,00,00,DD,2B,DD,2B,18,06,DD,6E,00,DD,
66,01
160 DATA 22,0D,9D,DD,6E,02,DD,66,03,22,0F,9D,11,00,40,CD,DA,9C,7C,E6,
3F,67
170 DATA E5,ED,40,0F,9D,09,7E,E1,01,00,C0,09,77,CD,00,9C,18,7A,83,20,
E4,C9
180 DATA F5,C5,D5,ED,40,00,9D,2A,0B,9D,CB,25,CB,14,09,44,4D,CB,25,CB,
14,55
190 DATA CB,25,CB,14,CB,25,CB,14,09,44,4D,62,2E,29,B7,ED,42,22,00,9D,
D1,C1
200 DATA F1,2A,00,9D,C9
```



```
; MIX and FADE screens for all CPC's
         ORG  #4000
         LD   BC,CMDTAB
         LD   HL,QQBUF
         CALL #BCD1            ;Set up RSX commands
         RET
CMDTAB:  DEFW CMDNAM
         JP   MIXSCR
         JP   FADOUT
CMDNAM:  DEFM "MIXSC"
         DEFB "R"+128
         DEFM "FADEOU"
         DEFB "T"+128
         DEFB 0
FADOUT   CP   1                ;Check if delay given
         JR   Z,GETDL          ;Yes, so get the value
         LD   HL,0             ;No, so set to minimum delay
         JR   GOTDL
GETDL    LD   L,(IX+0)
         LD   H,(IX+1)
GOTDL:   LD   (DELFAC),HL      ;Store delay factor
         LD   DE,#4000         ;Number of bytes on screen
FADLP    CALL GETRAN           ;Get a 'Random' number
         LD   A,H              ;Get the high byte of this
         AND  #3F              ;Mask it to range of screen
         LD   H,A              ;Put back as high byte
         LD   BC,#C000         ;Base address of screen memory
         ADD  HL,BC            ;Add 'random' offset
         LD   (HL),0           ;Clear the byte at this position
         CALL DELAY            ;Call the delay routine
         DEC  DE               ;Decrement bytes left to be done
         LD   A,D
         OR   E
         JR   NZ,FADLP         ;If more then go round again
         RET
DELAY:   PUSH HL               ;Save HL contents
         LD   HL,(DELFAC)      ;Get delay factor
DELLOP   LD   A,H
         OR   L
         JR   Z,DELEND         ;If its zero then done
         DEC  HL               ;else decrement it
         JR   DELLOP           ;and check again
DELEND   POP  HL               ;restore HL contents
         RET
MIXSCR   CP   2                ;Check if delay is given
         JR   Z,GETALL         ;Yes, then get all values
         CP   1                ;Check that source adrs is given
         RET  NZ               ;Do nothing if not
         LD   HL,0             ;Set delay to minimum value
         DEC  IX               ;adjust IX to for reading the
         DEC  IX               ;source screen address later
         JR   SAVDL
GETALL   LD   L,(IX+0)         ;Get the delay value given
         LD   H,(IX+1)
SAVDL    LD   (DELFAC),HL      ;Save the delay factor
         LD   L,(IX+2)         ;Get the source screen adrs
         LD   H,(IX+3)
         LD   (SRCSCN),HL      ;Save source screen address
         LD   DE,#4000         ;Number of bytes on screen
MIXLOP   CALL GETRAN           ;Get a 'random' number
         LD   A,H              ;Get the high byte of this
         AND  #3F              ;Mask it to within range
         LD   H,A              ;Replace as high byte
         PUSH HL               ;Save this offset on stack
         LD   BC,(SRCSCN)      ;Get source screen address
         ADD  HL,BC            ;Add the 'random' offset
         LD   A,(HL)           ;Get the byte at this position
         POP  HL               ;Restore the 'random' offset
         LD   BC,#C000         ;Start of screen memory
         ADD  HL,BC            ;Add the 'random' offset
         LD   (HL),A           ;Store the byte from source here
         CALL DELAY            ;Call the delay routine
         DEC  DE               ;Decrement number of bytes left
         LD   A,D
         OR   E
         JR   NZ,MIXLOP        ;If more to do then go round again
         RET
GETRAN   PUSH AF               ;This routine is an Z80 version
         PUSH BC               ;of the standard algorithm used
         PUSH DE               ;on computers to return a repeat
         LD   BC,(SEED)        ;number sequence of 65536 numbers
         LD   HL,(SEED)        ;The last random number is also
         SLA  L                ;used as the next seed for the
         RL   H                ;routine. In this way no number
         ADD  HL,BC            ;will be repeated in the 64k cycle
         LD   B,H              ; this is necessary for the fade/mix
         LD   C,L              ;routines to operate correctly
         SLA  L
         RL   H
         LD   C,L
         SLA  L
         RL   H
         SLA  L
         RL   H
         ADD  HL,BC
         LD   B,H
         LD   C,L
         LD   H,0
         LD   L,#00
         OR   A
         SBC  HL,BC
         LD   (SEED),HL
         POP  DE
         POP  BC
         POP  AF
         LD   HL,(SEED)
         RET
SEED     DEFW 0
DELFAC   DEFW 0
SRCSCN   DEFW 0
QQBUF    DEFS 4
```

SCREEN SAVE

by Robert Luckett

This extension consists of three extra commands, the first two allow the saving and loading of the entire screen to a bank of memory, the third frees the bank of memory used to the system. The SuperBasic program *Scr – Create* (Listing One) will create an object code file called *Scr – Exten* which can be loaded with *Scr – Boot* (Listing Two).

The commands in detail are:

SSCR – Allocates a 32K block of memory, then copies the screen memory to it. May return the errors 'out of memory' if there is less than 32K available or 'in use' if a screen is already saved, as only one screen can be saved at a time

LSCR – Copies data from memory to screen. Will return the error 'not found' if a screen has not been previously saved. A screen is loaded in about 0 15 of a second, multiple calls are allowed.

RSCR – Frees the allocated memory to the system Will return the error 'not found, if a screen has not been previously saved.

The extension is particularly useful when using the QL's limited windowing capabilities as the screen contents can be restored when the window is closed. For example, the extensions could be used to to restore the screen after using a menu which overwrites existing screen output Cursor positions will remain unaffected in any unused windows One final point, don't change the screen mode between calls to the routines, although this will not cause a crash, you will get unexpected results on the screen.

Listing 1

```
10 REMark 'scr_create'
20 REMark Creates object code file '
   scr_exten' on MDV1_
30 MODE 0:RESTORE :LET checksum=0
40 PRINT 'Insert cartridge into MDV1
   _, then press ENTER.'
50 REPeat wait:IF INKEY$=CHR$(10):
   EXIT wait
60 OPEN_NEW#3,mdv1_scr_exten
70 REPeat program
80 IF EOF:CLOSE#3:EXIT program
90 READ n
100 PRINT#3,CHR$(n);:REMark Dont
    forget the semi-colon!
110 LET checksum=checksum+n
120 END REPeat program
130 IF checksum<>14703
140 PRINT 'DATA ERROR: Check data
    statments, then re-run.'
150 DELETE mdv1_scr_exten
160 ELSE
170 PRINT 'scr_exten is installed
    on MDV1_.'
180 END IF
190 STOP
200 DATA 67,250,0,12,52,120,1,16
210 DATA 78,146,66,128,78,117,0,3
220 DATA 0,98,4,76,83,67,82,0
230 DATA 0,22,4,63,83,67,82,0
240 DATA 0,116,4,82,83,67,82,0
250 DATA 0,0,0,0,0,0,67,250
260 DATA 0,144,12,145,0,0,0,0
270 DATA 102,0,0,50,97,0,0,116
260 DATA 16,60,0,24,34,60,0,0
290 DATA 128,0,36,60,255,255,255,
    255
300 DATA 78,65,12,128,255,255,255,
    253
310 DATA 103,0,0,22,67,250,0,98
320 DATA 34,136,32,220,81,204,255,
    252
330 DATA 66,128,78,117,112,247,78,
    117
340 DATA 78,117,65,250,0,76,12,144
350 DATA 0,0,0,0,103,0,0,18
360 DATA 97,0,0,50,34,80,40,217
370 DATA 81,204,255,252,66,128,78,
    117
380 DATA 112,249,78,117,67,250,0,42
390 DATA 12,145,0,0,0,0,103,0
400 DATA 255,240,32,81,34,168,0,0
410 DATA 0,0,16,60,0,25,78,65
420 DATA 66,128,78,117,56,60,31,255
430 DATA 40,124,0,2,0,0,78,117
440 DATA 0,0,0,0
```

Listing 2

```
10 REMark 'scr_boot'
20 REMark Loads 'scr_exten'
30 PRINT 'Insert scr_exten into
   MDV1_, then press ENTER.
40 REPeat wait:IF INKEY$=CHR$(10)
   :EXIT wait
50 LET base=RESPR(196)
60 LBYTES mdv1_scr_exten,base
70 CALL base
80 NEW
```



SHOOT OUT

by Martin Connor

This is a two player, Wild West shoot-em-up in about 2.25K of pure machine code for the Spectrum. Full instructions, etc, are included in the program.

First, type in Listing 1 (the warm-up program) and save it to tape using: *Save "Shoot-out" Line 1*. Then *New* the computer and begin the task of typing in Listing 2. When this is completed, *Run* the program – you will then have to wait about 38 seconds while the graphics and machine code are poked into memory. Now a check is run.

The number 100 will appear on the screen and following that, all the line numbers containing code, up to Line 530. If an error has been made in any of these lines, the list will stop and tell you which line the mistake is in – so double checking against the printed listing is easy.

When the program is bug-free and a message appears you must save the code to tape directly after Listing 1 with: *Save "Shoot-Out 2" Code 48500,3000*. *Rewind the tape, type Load* "", and play the game!

Of course, if the typing is all too much for you, I can make available tape copies for £1.50. Send off to Martin Connor, 7 Holme Rd, Didsbury, Manchester, M20 8TX.

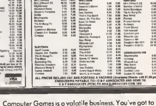
```
10 PAPER 0: BORDER 0: INK 0: CLS
20 PRINT AT 0,6; PAPER 2; INK 7; FLASH 1;"WELCOME TO SHOOT-OUT";AT 12,12;"LOADING";AT 21,0; FLASH 0;"MARTIN CONNOR 1984"
25 PRINT AT 0,0
30 LOAD ""CODE
40 INK 7: CLS : PRINT AT 0,13; INK 6;"CONTROLS";AT 1,12; INK 7;"----------"
50 PRINT AT 5,1; INK 4;"LEFT:";AT 6,1; INK 6;"-----";AT 5,23; INK 4;"RIGHT:";AT 6,23; INK 6;"------"
60 PRINT AT 8,1;"FIRE - 1 ";AT 10,1;"UP   - Q ";AT 12,1;"DOWN - A ";AT 14,1;"LEFT  1 ";AT 16,1;"START  2 "
70 PRINT AT 8,23;"FIRE   0 ";AT 10,23;"UP    P ";AT 12,23;"DOWN - L ";AT 14,23;"LEFT   K ";AT 16,23;"RIGHT  M "
80 PRINT AT 21,5; PAPER 2; FLASH 1; INK 7;"PRESS ANY KEY TO PLAY"
90 IF INKEY$="" THEN GO TO 90
100 CLS : RANDOMIZE USR 50000
110 PRINT AT 4,12; PAPER 4; FLASH 1;"TIME OUT";AT 8,5;"ANOTHER GAME? (Y OR N)"
115 IF INKEY$="" THEN GO TO 115
120 IF INKEY$="Y" OR INKEY$="y" THEN GO TO 100
130 IF INKEY$="N" OR INKEY$="n" THEN GO TO 150
140 GO TO 115
150 STOP
```

Listing 1

```
5 REM **POKE CHOOT DATA**
10 RESTORE 60: FOR n=0 TO 95: READ a: POKE 49500+n,a: NEXT n
15 REM **POKE GRAVE DATA**
20 RESTORE 80: FOR n=0 TO 47: READ a: POKE 49800+n,a: NEXT n
25 REM **POKE CACTUS DATA**
30 RESTORE 90: FOR n=0 TO 31: READ a: POKE 49700+n,a: NEXT n
35 REM **POKE M/CODE DATA**
37 LET z=50000
40 FOR n=100 TO 540 STEP 10: RESTORE n
42 FOR d=0 TO 49: READ a: POKE z,a: LET z=z+1: NEXT d
45 NEXT n
47 RESTORE 300: FOR n=0 TO 27: READ a: POKE z,a: LET z=z+1: NEXT n
50 GO TO 9000
55 REM **DATA FOR COWBOY**
60 DATA 6,6,7,50,63,63,16,16,60,60,240,248,240,254,12,0,16,14,16,13,4,0,0,9,0,0,120,0,240,32,16,144,144,0,0,7,6,3,1,3,1,248,30,232,96,48,152,48,152,12,12
70 DATA 15,011,127,127,60,16,96,96,224,236,252,252,0,0,44,50,16,15,4,0,0,9,0,0,0,240,32,16,144,144,250,120,23,6,12,25,12,25,16,16,224,96,192,130,192,130
75 REM **DATA FOR GRAVE**
80 DATA 3,192,3,192,3,192,3,192,3,192,127,254,127,254,127,254,3,192,3,192,3,192,3,192,3,192,3,192,3,192,3,192,7,208,7,240,7,252,1,254,1,250,0,250,0,127,0,0
85 REM **CACTUS DATA**
90 DATA 49,115,115,115,115,127,127,63,120,192,192,208,206,206,206,206,3,3,3,3,3,3,3,3,254,254,252,192,192,192,192,192
95 REM **THE ARE NOW 2.25K & DATA OF POKE MACHINE CODE''  GOOD LUCK AND HOPE YOU GET ON WITH THE DOWN!!!! **
100 DATA 33,10,194,68,100,33,011,194,56,150,33,27,194,54,0,175,50,86,92,62,0,1,0,0,205,89,203,62,82,215,62,67,225,62,79,215,62,82,215,62,69,215,62,32,215,60,00,215,62,48,4633
110 DATA 215,33,16,194,54,60,20,54,00,35,54,00,35,54,48,62,0,1,23,0,205,09,203,62,83,215,62,67,215,62,79,215,62,82,215,62,69,215,62,62,215,62,09,215,62,48,210,62,0,1,4341
120 DATA 14,0,205,09,203,62,90,215,62,73,215,62,77,215,62,69,215,62,1,1,11,0,205,09,203,62,48,215,62,57,215,62,57,215,62,57,215,33,58,199,62,36,119,43,62,57,119,43,62,57,4707
130 DATA 119,17,66,194,33,107,72,205,229,202,17,34,194,205,235,202,17,80,194,33,115,72,205,229,205,17,34,194,205,235,252,33,96,194,54,10,33,97,194,54,0,17,192,195,33,134,72,205,229,202,4231
140 DATA 17,100,193,205,119,202,17,202,193,33,96,92,205,235,200,17,93,193,205,119,202,33,242,193,54,0,55,252,193,54,0,62,0,50,1,194,1,0,5,11,120,177,32,251,205,100,202,33,27,194,5675
150 DATA 126,254,10,202,252,205,33,3,199,130,204,10,202,85,196,207,06,198,205,210,197,33,242,193,126,254,10,204,104,200,23,203,193,126,254,10,200,214,198,33,3,196,126,254,10,202,25,196,205,142,7496
160 DATA 2,123,254,1,200,62,223,219,254,203,79,200,215,201,62,193,219,254,202,0,7,204,62,207,62,127,219,254,203,103,200,166,197,62,127,219,250,203,95,204,110,197,62,239,219,254,202,71,204,150,200,8306
170 DATA 62,251,219,254,203,71,204,77,205,62,253,219,254,203,71,204,16,200,62,254,219,254,204,87,204,08,197,62,254,219,254,203,79,200,10,197,62,247,219,254,200,71,204,217,199,1,1,0,11,120,7010
180 DATA 177,32,251,33,242,193,126,254,10,204,154,200,33,202,193,126,254,10,204,214,198,1,0,16,11,120,177,32,251,33,242,193,126,254,10,204,160,207,53,232,193,126,254,10,200,214,198,193,68,196,7379
190 DATA 17,202,193,207,223,202,125,254,0,207,254,32,200,254,46,206,254,96,206,222,120,206,254,160,207,254,192,201,254,254,200,44,205,201,202,45,45,17,92,193,200,149,202,17,205,195,200,229,202,201,8814
200 DATA 17,202,193,205,223,202,125,254,0,200,254,41,202,254,73,200,254,105,200,254,137,207,254,160,202,254,201,200,254,233,200,205,201,202,44,17,94,193,205,119,202,11,202,193,205,229,205,201,17,192,9782
210 DATA 193,209,223,202,125,254,30,200,254,62,200,254,94,207,254,120,200,254,180,200,250,199,202,250,223,207,254,230,207,205,201,202,44,17,140,193,205,119,202,17,192,193,205,229,202,201,17,192,195,207,9999
220 DATA 223,202,125,254,21,207,254,53,202,254,60,200,254,117,200,254,149,200,250,181,207,250,213,207,254,245,200,64,205,201,202,45,45,17,100,193,200,119,205,17,192,195,205,229,202,201,33,97,194,126,8853
230 DATA 254,10,40,57,17,00,199,209,223,202,124,254,00,32,5,125,254,211,40,33,200,192,202,205,150,202,17,36,198,205,235,202,17,00,194,205,250,202,33,95,194,126,204,5,119,111,30,0,17,60,6443
240 DATA 0,207,101,3,201,33,97,194,56,10,201,17,00,194,205,223,209,120,254,64,32,5,125,254,19,40,45,207,150,202,205,192,202,209,101,202,205,101,200,17,36,194,200,235,202,17,00,194,209,229,6980
250 DATA 202,33,97,194,134,199,5,119,111,30,0,17,60,0,205,101,3,201,33,97,194,54,0,201,33,96,194,136,254,10,40,57,17,66,194,205,253,202,124,254,00,32,5,125,209,203,40,33,209,192,5649
260 DATA 202,205,150,202,17,36,194,200,235,202,17,06,194,200,229,202,33,96,194,126,214,5,119,111,30,0,17,00,0,205,101,3,201,33,96,194,56,10,204,17,36,194,205,223,262,124,250,64,32,5,6103
270 DATA 125,254,31,46,45,205,150,202,205,192,202,205,143,202,206,141,202,17,36,194,205,235,202,17,66,194,205,250,205,33,90,194,126,190,5,119,111,30,0,17,60,0,207,101,3,201,33,96,194,54,6512
280 DATA 0,201,17,1,194,205,223,200,36,203,20,194,223,199,44,203,70,194,223,199,207,101,202,40,203,70,194,223,199,44,203,126,194,233,199,17,1,194,207,223,202,34,0,46,54,200,17,1,194,202,7023
290 DATA 250,202,125,254,31,200,223,199,254,63,200,253,199,230,97,202,223,199,254,127,202,222,199,254,159,202,223,199,254,191,200,223,199,254,233,202,225,199,254,222,202,233,199,17,192,195,205,225,202,17,9773
300 DATA 1,194,26,100,32,5,19,36,199,40,36,200,159,206,17,1,194,26,100,42,0,19,26,109,40,10,205,159,202,17,1,194,26,100,193,19,26,107,40,1,201,200,223,199,200,201,201,31,100,0,9999
310 DATA 17,100,0,205,101,3,17,192,193,205,223,202,207,20,202,17,192,193,205,22
```

```
3 202,209 75 203 33,5 194,54 10,17,202,193,205 222,209,205,200,202,40,205,200,20
6,33,10,194,126,60 254 58 00 6060
320 DATA 12,119,62,0,1 7,0,209,09,202,120,215,201,33,17,194,126,60,119,1,6,0,62
,0,205,09,202,126,215,62,40,215,33,16,194,54,40,33,17,194,126 254,00,193,35,17,1
94,54,40,35 4621
330 DATA 54 00 1,7 0,62,0,209,09,203,62,40,215,62,40,215,201,17,1,194,205,223,2
02,54,0 33 223,193,54,0,201,33 252,193,126,250,20,200,37,200 193,205,225,209,205
,159,202,200,159 203 6391
340 DATA 44,40,54,200 17,1,194,205,229 205,33 252,193,54,10,201,17,202,193,205,
223,202,120,254,00,32,31,125,254,160,200,254,161,206,254,162,200,254,163,200,204
,164,200,254,168,200,206,166 200 254,8234
350 DATA 167,200,254,160 200 254 169 200,205,192,202,205 109,205,17,92,193 200,
119 202,17,202 193,206,229,202 201,17,202,193,205,225,202,124,254,64,32,31,125,2
54,32,200,254,33,200,254 34,200,254 35,8276
360 DATA 200,254,36,200,254,37 200 254 38,200,254,39,200 254,00,200,254 41,200,
205,159,202,205,159,202,205,192,202 205,141,202,200,141 202,205,141 207,17,92,19
3,205 159 209,17,202,193,205,229 205,201,8007
370 DATA 33 242,193,126,254 10,200,31,193,193,205,223 205,205,159,200,200,159,2
02,45,54 15,17,247,193,205,225,202 33,242,193,54,10,202,17,247,193,205,223,202,3
0,203,126,194,201,201,45,205 126,194 2770
380 DATA 201,201,205,141,202 50,36,207,94,190,201,205,17,247,193,200,223,200,54
,0,45 54 15,17 247,193,203,225,209,125,254,0,200,201,201,254,32,202,201,201,254,
64,202,201 201,254,94,202,205,201,8012
390 DATA 254,120,202 201,201,254,160,202,201,201,254,192,202,201,201,254,224,20
6,203,209,17 247,193,200,222,202,44,17,247,193,26,130,32,5,19,26,109,40,30,205,1
59,205,17,247,193 26,130,32,5,19,7527
400 DATA 26,109,40 35 205,159,202,17,247,193,26,120,192,19,26,109,41,1,201,205,
205,201,203 222,199,33,100 0,17,100 0,205,141,3 17,202,193,200,223,202,203,24,20
3,17,202,193,205,232,202,200,6768
410 DATA 75,205,33,3,194,54,10,17,192,195,209,223,202,205,201,202,44,209,204,20
7,17,247,193,205,223 202,54,0,33,10,194 126,00,119,254,50,00,10,62,0,1,50 0,209,
09,203,33,10 194,126,5009
420 DATA 215 201,33,19 194,126,60,119,02,0,1,20,0,209,09,209 33,19,194,126,215,
62,40,215 33,10,194,54,40,20,126,254,30,194,1,20,0,02,0 200 09,209,62,40,215,62,
40,215 33,10 4770
430 DATA 194 54,40,33,54,40,201,17,247 193 205,223,202,54,0,33,202,193,54,0,201
,17,192,193,200,223,209,124,254,64,32,31,125,290,62,200,204,61,206,254,60,209,20
4,59,200,254,58,206,254,57,7047
440 DATA 200,254,56,205,254 20 200,254,54,205,201,53,200,209 151,209 205 159,20
2,205,192,202,205,141 202,206,141,205,205,141,202,17,144,193,200 119,202,17,192,
193,209 229,202 201,17,192,193 205,223,202,8754
450 DATA 124,254,00,32,31,122 254,100,206,254,100,200,254,120,206,254,107,206,2
54 104,200 254 107,00,254 104 206 254 103 200 254 102 206 254 101 200 205 192,2
02,203 159,202,17 240,193 215,119,202 17,193 9292
460 DATA 193 205,229 202 201,6,0,26,119,36 19 16 254,37,37,37,37,37,37 37,37,20
1,205,93,202,44,205,93,202,45,200,205,110,202,205,159,202,205,110,209,200,159,20
6,205,110,202 205 141 202,200,4733
470 DATA 141,202,201 0 32,205,20,205,20,200 20,45,205,20,203,20,203,20,16,243,2
01,205,20 205,20,203,20,6,32,0,9,202,20,202,20,202,20,203,6,0,54,0,36,16,251,37,
37,37,37 37,4000
480 DATA 37,37,37,201,205,176,202,44,205,176,202,45,207,205,176,200,205,159,202
,203,176,200 200,159,202,202,176,202,206,140,202,209,141,202,206,36,103,17,26,11
3,201 126 30,19,125,10 201 205 110,203,7484
490 DATA 205 159,202,205,110,202,206,141,202,201,6,0,20,119,19,40 26,119,19,36,
40,192,1,0 40,11,120,177,32,251,193,16,235,37,37,37,37,37,37,37,37,201,17,126,19
4,200,200,209,205,159,5043
500 DATA 205,205,200,202,205,159,202,200 200,202,201,6,0,54,0,66,54,0,43,36,192
,1,0 40,11 120,177,32,251 193,16,253,37,37,37,37 37,37,37,37,201,205,43,203,205,
159 202,205,43,203,5774
510 DATA 203,159,202,205,43,207,201,197,209,00,33,215,241,215,193,131,215,201,3
3,26,194 126,254,10,40,6,33 26,194,20,10,201,33,26,194,54,0,30,54,194,126,61,119
,254,60 40,11,1,17 0,5097
520 DATA 62,1,205,20,203 126,215,201,33,33,194,126,61,110 254 47,00,17,62 1,6,1
6 0,203,09,203,126,215,62,00,215 33,34,194,54,20,201,33 32,194,126,61,119,254,47
,40,45,62,1 1,4040
530 DATA 15,0,209,09,205 120,215,62,57,205,62,40,215,33,35,194,54,57,38,54,50,2
01,62,1,1,15,4,200,09,205,62,00,215,62,40,215,62,40,215 17,192,193,205,223,209 2
20,203,202,00,205,5673
540 DATA 201,202,17,202,193,200,222,202 203,201,205 44,205,201,203,33,27 194 54
,10,201,17,192,193,200 223 203 205,291,200 44,209,201,202,17,202,193,200 223 209
,209,201,202,44 205,201,202 17 00 194,0135
550 DATA 205,223,202,206,192,207,205,150,202,200,192,202,17,20,194,200,223,202,
203,192,202,203,159,203,206,192,202,201
5000 FOR n=200 TO 540 STEP 10
9010 RESTORE n: LET s=0
9020 FOR d=0 TO 49: READ a: LET s=s+a: NEXT d
9030 READ a: IF a<>s THEN GO TO 9999
9035 PRINT n: POKE 23692 223
9040 NEXT n
9050 LET s=0: RESTORE 550: FOR d=0 TO 27: READ a: LET s=s+a: NEXT d
9060 IF s<>5008 THEN LET n=550: GO TO 9999
9065 PRINT 550
9070 PRINT "M/CODE DATA ALL CORRECT.        WELL DONE,ENJOY THE GAME."
9080 STOP
9999 PRINT "M/CODE DATA ERROR IN LINE ";n
```

Listing 2



Dragontorc tips

I've had a marvellous letter from an old friend of the column, Julian Lyndon-Smith who has teamed up with Kevin "Suggsy" Johnson to back into Amstrad games They have started with this routine for getting infinite energy on the tape version of *Sorcery*.

Run this program and then *New* it

```
10 MEMORY 12287 RESTORE
20 FOR I=12288 TO 12386 READ X:
   POKE I,X:NEXT
30 END
40 DATA 205,24,187,62,0,205,14,188,33,
   112,1,17,244
50 DATA
   1,62,22,205,161,188,82,201,50,6,
   2,17,111,1,205,250
60 DATA 1,33,101,0,14,28,205,89,4,39,
   169,0,14,3,205,86,4,33
70 DATA 123,0,14,3,205,88,4,33,163,0,14,
   5,205,88,4,62,169
80 DATA 50,182,0,62,50,50,183,0,62,4,50,
   184,0,195,100,0
90 DATA 62,0,50,218,219,26,195,220,5,
   201,54,0,35,13,194
100 DATA 89,4,201,0,0,0,0,0
```

Now type this as a direct command with a blank tape in the machine:

FOR I=12288 TO 12384: POKE (I-11264),PEEK I:NEXT:SAVE "INFINITE ENERGY",B,1024,96,1024

To play the game type *Run "INFINITE ENERGY"* Play your tape, insert fully rewound *Sorcery* tape and press play and any key Thanks to both of you, and please send more tips soon

Sprite collision

Sgt John Cousins in West Germany has found some tips for the CBM *Monty* on the *Run*. Type any of these in the high score table – SPECTRUM, MADONNA, II SHY, PEUGOT 205 GII, XR2 and MINTER for a reply If you type *I want to cheat*, you get the reply *Yessuh Boss!* Then go to the second room and you will see an object in the water, land on this and sprite collision is switched off

I believe this only works on early versions of the game, John, and it spoils it a bit, but is very useful for exploring

Now let's finish with our *Dragontorc* tips – we left old Maroc in the Wyemwood surrounded by the minions of Morag

First search the woods, pools, leaves, etc, with *Servant* for spells and gems Find elves and give them gems to get a torch, key or missile spell. Use key to open the chest for a *Detect* spell Use torch on goblin fire to light it.

Beware of the flying cube that waits for you – it transports you back to the circle. Decoy it. Take the goblins key, open the chest for the door key, give the bow to the elf

Invisible goblins

Open door with key (beware the cube – use *Unseen* or *Slow*, but kill the snake first) Enter and kill one goblin and the elves will follow Lead them onto the goblins to preserve your missiles (elves as cannon fodder! Tolkien will be turning in his grave) Unlock doors with same key and repeat the process Beware the magic balls

Two rooms have invisible goblins guarding chests. Use *Detect* to make them visible and lead elves and goblins together (elves still can't see them). Take key and open chests Take *Undo* and other spell and pentagram symbol and the key you used

Find room with symbol on the floor – place the matching symbol on top to reveal the cube that transports you back out of the citadel. Leave the key and symbol there

Beware the Demon who closes doors and takes away your ability to open them Use *Mantle* and *Missile*. Demons can kill elves and sometimes vice versa.

Magic fireball

Morag is past a room with a flashy (sic) imp in it. One touch and you are transported back out. Bring elves into the final complex. Missile skeletons and winged demons yourself as they can kill elves. Find pool to replenish energy If you leave an elf behind go back for him.

Find green key Put torch on ground with key near it, snakes will come out. Dodge them or use torch to kill them Use *Undo* on key and open the chest Take white key, but leave symbol for later Unlock the door, lead goblins, etc, off to elves to deal with them out of Morag's protection

Beware the invisible spider – kill with missile or elf if you want. Use *Slow* or *Unseen* in Morag's room and place hand on crown Take wand and go left.

Use *Bane* to kill wraiths Place wand on magic fireball generator This changes it to a doorkey. Take it Open door Find chest opened by green key Use wand to deactivate snakes and torch to kill them. Take door key

Open door to snake room Kill them with torch. Find chest with wand. Use green key to open it Use wand again to turn off snakes and magic Take *Mindkey* spell. Take wand and crown and pentagram symbol back to cube room with other pentagram symbol Leave the symbol there

Pentagram symbol

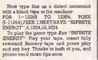
Open locked door with *Mindkey* Use the small yellow key from the invisible goblin room to the next door, but beware the axes that fly out. Use the wand to switch off the axes and take the pentagram symbol.

Place one symbol on the cube and missiles fly out Place another symbol and the cube reappears Go down the cube, taking the crown to arrive in *Cairndoom*

Open doors with *Mindkey* Deal with the goblin, dwarf and demon guards and find the huge stone Use *Mindkey* to find Merlyn Give him the last crown to end the game

I hope that last bit makes sense – I confess I haven't played that far and the tips get a bit confusing at times

Tony Sandle



Sorcery from Virgin Games

Tony Bridge's Adventure Corner

Handbook series

Since I last looked at Adventure Clubs, another has come to my attention. actually, it is not strictly a club, but rather a series of handbooks H & D Services have been advertising its range of monthly handbooks in the back of *Popular* for some time Covering most popular micros, each book contains a variety of tips, pokes, maps and reviews

I've seen the adventure book, and it is a very impressive 22-page effort packed with hints and tips, maps, complete and partial solutions, letters, reviews, competitions – in fact, quite the best collection of adventure-related items that I've seen in one place of late Not only all this, but also editorial comment on the software scene, reviews of computing magazines, news . . . the list goes on. Issue 5 contains info on *Dun Darach, Emerald Isle, Fairlight* (with map), *Bored of the Rings, Minder*, the complete solutions to several well-known adventures including *Mindshadow* and *Heroes of Karn* (again, with maps), help requested and offered and a swap section for old adventure tapes.

As you'll see from the ads, the books are either 75p or £1 00 (subscription rates are three for £2.75, six for £5 or 12 issues for £8) an the handbooks are stunning value and any adventurer interested in finding out a bit more about the world outside as well as how to progress in the latest game, should send a cheque (mine is in the post already!) to H & D Services, 1338 Ashton Old Road, Higher Openshaw, Manchester M11 1JO

A more conventional adventure club appears this month from Camel Micros. The Camel Club is aimed particularly, though not exclusively, at adventure-writers the monthly newsletter will feature articles on how to write adventures, but there will also be reviews, a helpline and other items of general interest. All Camel adventures will be on offer for just £2.50, and there will be discounts on adventures from other sources The annual membership of £9 includes a free adventure: not a bad deal

Some time ago, I took a long look at Incentive's *Graphic Adventure Creator*. The other Amstrad adventure generator is *Genesis*, which comes from Camel, via CRL I still believe, after all this time, that *GAC* is the friendlier and more useful of the two While it is not the complete answer to adventure-writing on the Amstrad, Incentive's utility is certainly the easiest to use, with Gilsoft's *Quill* a close second The demo supplied with *Genesis* is very attractive, with lots of detailed graphics and attractive text windows with lots of descriptive text. Unfortunately, the initial favourable response was rather dulled when the program crashed in the second location.

While there's no doubt that a good-looking adventure can be created with *Genesis*, and I'm quite eager to have a go at it, nevertheless it's the sheer hard work involved that stops me. Before getting down to the real business, it's necessary to generate a stand-alone game using the 'cloner' program. This process isn't helped along by the haphazard arrangement of the various program modules on the tape, and the obscure nature of the manual. But it is not only the manual that makes the utility hard going – look for example, at the way in which *Genesis* requires you to program the " *Get*" command:

Call <30>:
[Obst
(*Carriable*,OB1)
=0]
Msg<17,1>:*Finish*:
[*Objc*(OB1)#*Ploc*]
Msg<8,1):*Finish*:
[Obst(*Carry*,OB1)#O] *Msg*<8,1):*Finish*:
Copy<1,*Obst*(*Carry*,OB1)>: *Call*<39>:
Finish:

Working through all this carefully, you'll probably be able to decipher a lot of it, but compare that with the command that *GAC* expects

If (Noun1 and Verb 7) Get Noun1 Okay End

Isn't that a lot easier to understand (Verb 7, of course is *Get* or *Take*)?

The writer can make full use of the Amstrad's sound facilities with *Genesis*, while *GAC* will only allow the occasional beep The graphic department is rather harder to assess the results from both programs can be stunning, and I find it hard to decide which I prefer *GAC* allows for better pictures, while *Genesis* lets the writer include little sub-pictures, for example, inventory graphics as required.

But once again, Incentive makes it as easy as possible for the graphics to be created, while CRL/Camel seems to make it as hard as they can for the user

But I'm glad to see that *Genesis* is now up to version 1.1, with high-speed graphics, expanded graphics commands and multi-command input (I'm quoting the press release) and will also soon be available on disc. This will make it possible for huge chunks of data to be stored for disc access during the adventure it will also feature text compression, a Random function as well a "Level 2" language which will make it easier to use for beginners.

Dun Darach from Gargoyle Games

This seems to answer many of the problems that are to be found with adventure-creators, and I can't wait to start creating a really large disc-based game. I hope that I can bring you a full report when the utility is released.

Camel are also, it tells me, working on a utility which will generate Spectrum versions direct from your Amstrad adventure Incentive, too, is nearly ready with a disc version of *GAC* which will make full use of the 6128's memory in disc-based games

I'm glad to see that the market is expanding, it can only be good for us adventurers who want to try our hand at writing

I've just been sent the first *GAC*-written program from a reader (expect the first commercial effort soon from Global) it's from Linda Wright (aka the House-Elf!), and it's called *Sharpe's Deeds*. I'll look into it in more detail next week, and also at Linda's comments regarding the use of *GAC* in writing the game

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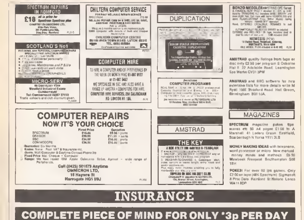
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7	(5)	Hypersports	(Imagine)	£8.95
8	(4)	Finders Keepers	(Mastertronic)	£1.99
9	(–)	They Sold a Million	(Hit Squad)	£9.95
10	(10)	One Man and his Droid	(Mastertronic)	£1.99

Atari

1	(1)	One Man And His Droid	(Mastertronic)	£1.99
2	(2)	Action Biker	(Mastertronic)	£1.99
3	(9)	Fighter Pilot	(Digital Integration)	£9.95
4	(3)	Chimera	(Firebird)	£3.99
5	(–)	Spy Hunter	(US Gold)	£9.95
6	(2)	Spy vs Spy 2	(Databyte)	£9.95
7	(–)	Steve Davis Snooker	(CDS)	£9.95
8	(10)	Electra Glide	(Activision)	£9.95
9	(6)	Smash Hits 4	(English)	£9.95
10	(–)	Mercenary	(Novagen)	£9.95

BBC

1	(1)	Yie Ar Kung Fu	(Imagine)	£9.95
2	(–)	Southern Belle	(Hewson)	£7.95
3	(3)	Way of the Exploding Fist	(Melbourne House)	£9.95
4	(–)	Lord of the Rings	(Melbourne House)	£9.95
5	(7)	Citadel	(Superior)	£9.95
6	(2)	Strike Force Harrier	(Mirrorsoft)	£9.95
7	(–)	Mini Office 2	(Database)	£14.95
8	(–)	Nightshade	(Ultimate)	£9.95
9	(8)	Phantom Combat	(Doctorsoft)	£5.95
10	(–)	Computer Hits 10	(Beau Jolly)	£9.95

Commodore 64

1	(–)	Hardball	(US Gold)	£9.95
2	(1)	Yie Ar Kung Fu	(Imagine)	£8.95
3	(2)	Kung Fu Master	(US Gold)	£9.95
4	(–)	Electra Glide	(English)	£9.95
5	(3)	Eidolon	(Activision)	£9.95
6	(–)	FA Cup Football	(Virgin)	£9.95
7	(6)	Desert Fox	(US Gold)	£9.95
8	(4)	Rock 'N' Wrestle	(Melbourne House)	£9.95
9	(7)	Mercenary	(Novagen)	£9.95
10	(–)	Zoids	(Martech)	£8.95

Spectrum

1	(1)	Movie	(Imagine)	£7.95
2	(–)	Sky Fox	(Ariolasoft)	£9.95
3	(3)	Winter Games	(Epyx/US Gold)	£7.95
4	(–)	FA Cup Football	(Virgin)	£7.95
5	(2)	Hypersports	(Imagine)	£7.95
6	(5)	Devils Crown	(Mastertronic)	£1.99
7	(6)	Yie Ar Kung Fu	(Imagine)	£7.95
8	(10)	Spellbound	(Mastertronic)	£2.99
9	(3)	Commando	(Elite)	£7.95
10	(4)	Rambo	(Ocean)	£7.95

All figures compiled by Gallup/Microscope

Top Twenty

1	(–)	Hardball *(C64)*	US Gold
2	(1)	Yie Ar Kung Fu *(Various)*	Imagine
3	(2)	Formula One Simulator *(Various)*	Mastertronic
4	(12)	Rambo *(Spectrum/Amstrad)*	Ocean
5	(–)	FA Cup Football *(Spectrum/C64/Amstrad)*	Virgin
6	(3)	One Man and his Droid *(Various)*	Mastertronic
7	(–)	Sky Fox *(Spectrum/C64/Amstrad)*	Ariolasoft
8	(5)	Movie *(Spectrum)*	Imagine
9	(6)	Hypersports *(Various)*	Imagine
10	(10)	Winter Games *(Spectrum/C64/Amstrad)*	Epyx/US Gold
11	(9)	Action Biker *(Spectrum/C64/C16/Atari)*	Mastertronic
12	(7)	Finders Keepers *(Various)*	Mastertronic
13	(–)	Mr Puniverse *(C16)*	Mastertronic
14	(11)	Commando *(Spectrum/C64)*	Elite
15	(–)	They Sold a Million *(Spectrum/C64/Amstrad)*	Hit Squad
16	(–)	Way of the Exploding Fist *(Various)*	Melbourne House
17	(14)	Elite *(Spectrum/C64/Amstrad/BBC)*	Firebird/Acornsoft
18	(–)	Electra Glide *(C64/Atari)*	Activision
19	(8)	BMX Racers *(Spectrum/C64/C16)*	Mastertronic
20	(–)	Zoids *(Spectrum/C64)*	Martech

Figures compiled by Gallup/Microscope

Readers' Chart No 65

1	(3)	Lord of the Rings *(Spectrum/C64/Amstrad)*	Melbourne House
2	(1)	Elite *(Spectrum/C64/Amstrad/BBC)*	Acornsoft/Firebird
3	(2)	Commando *(Spectrum/C64/C16)*	Elite
4	(6)	Movie *(Spectrum)*	Imagine
5	(4)	Yie Ar Kung Fu *(Spectrum/C64/Amstrad/BBC/MSX)*	Imagine
6	(5)	Winter Games *(Spectrum/C64/Amstrad)*	Epyx/US Gold
7	(9)	Kung Fu Master *(C64)*	US Gold
8	(–)	Swords and Sorcery *(Spectrum/Amstrad)*	PSS
9	(10)	Rambo *(Spectrum/C64/Amstrad)*	Ocean
10	(–)	Way of the Exploding Fist *(Various)*	Melbourne House

Winning Phrase No 65 "Marcos fled in time to old Ron", from J Brook, of Fife in Scotland, who wins £25. An honourable mention goes to Derick Smit, of Northallerton, North Yorks, for "The ring's on Frodo, mate"

Now voting on week 67 – £25 to win

Each week *Popular* is compiling its own special software top ten chart – compiled by YOU

And each week we will send £25 to the person who sends in, with their chart votes, the most original (witty, neat or clever – but never rude) phrase or sentence made up from the letters (you don't have to use them all) in the titles of the top three programs in this week's Readers' Chart, published above

You can still vote in the chart without making up a slogan – but you won't be in with a chance of winning the prize

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP

Voting for Week 67 closes at 2pm on Wednesday March 19, 1986. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name ....
Address ....
....
....

My top 3: Voting Week 67
1..............................
2..............................
3..............................

My phrase is: ....

New Releases

ANIMATED

Movie Maker is an unusual program, nearly unique in fact, in that it is specifically designed to produce animated movies with your computer

In a sense the program has similarities with a games designer – designing shapes, animating them, putting sound with movement and so on, but the intention is clearly not the same and the presentation of the ideas therefore different.

Making a complete 'movie' is potentially quite a complex business but the building blocks are essentially simple and consist of six kinds of file each stored independently on disc and usable in subsequent creations The files are shape (the actual moving characters used in the film), background (the non-moving scenery) animation, (the sequences of movement the shape objects make over the background), sound (a series of sound effects, and music) Other files allow for shape magnification changes and inserting text on to the screen.

Each of these files has an associated series of commands which mix single key press instructions and joystick inputs There are some fairly complicated sequences to learn before a complete movie is created but the program allows for an easy start using existing files which have already been created and merely modifying them

An interesting program, capable, with some effort, and planning, of impressive results but it seems not to be suitable for complete novices or very young children

Program *Movie Maker*
Price *£16 95*
Micro *Commodore 64*
Supplier *Anolasoft UK*
68 Long Acre
Covent Garden
London WC2E 9JH

ESSENTIAL

Although it has recently had a few rivals taking pot shots at its crown, *Tasword Two* probably remains the most used and best loved word processor for the Spectrum For those with microdrives a new edition of the program is out called, not surprisingly, *Tasword 3*

For those already familiar with Tasword there is little different about the new version, essentially all the commands are the same except that there are some useful additions and the chance to store files in sections on microdrive and then print them out in one go What this means is that it is possible to create extremely long documents

Although the program comes with an excellent manual, it also retains the Tasword Tutor – a file loaded from microdrive which takes you through each of the com-

Pick of the week

FRENCH COMIC

Don't you just love it when things are simple Try this. *Get Dexter*, a French game licensed over here by PSS, is the best game I have ever seen on an Amstrad If you play games you will require around two nanoseconds peek at one screen shot before you start drooling

The game is the culmination of the game style begun by Ultimate with *Knight Lore* – imagine that game in hi-res multicolour, with astoundingly imaginative graphics that mix French comic book styles with odd alien beasties derived from blue period cubists Imagine that you can pull or push around virtually any object to your heart's content, add moving platforms, jump platforms, vicious wrought iron gates, a punk with a mohican haircut and at least one blonde nurse (maybe more) and you have something of the character of the game.

You are the hero, Dexter, and aided by a strange yellow pet (which behaves like a dog but looks like a vacuum cleaner), you are seeking the letters that make up a code word. Then find the central computer and Bob's your uncle or the world's saved, or something (I had problems translating the plot from the French) Getting the letters is a matter of finding the correct uses for numerous bizarre objects scattered around the many rooms. Some are easy – footpads which open doors, others are weird – I mean do I need the vase of flowers or not?

It's becoming a little wearisome to keep describing games as interactive movies but I can think of no other game that mixes such spectacularly detailed, beautifully animated, and more than anything else,

This Week

Program	Type	Micro	Price	Supplier
Deathsville	Arc	Amstrad	£8.95	Bubble Bus
Pyradey	Ut	Amstrad	£29 95	Gremlin Graphics
Pyraword	Ut	Amstrad	£29 95	Gremlin Graphics
Slick!	Ut	BBC	£7 95	BJ Computing
Space Escort	Arc	C16	£1 99	Atlantis
Ark Pandora	Ad	Commodore 64	£9 95	Rino
Rollin	Arc	Commodore 64	£1 99	Atlantis
Shoot em Up	Arc	Commodore 64	£2.95	Rino
Mugsy s Revenge	Ad	Commodore 64	£8 95	Melbourne House
Disc Warrior	Arc	MSX	£2.95	Rino
QL Jabber	Arc	QL	£8 95	Sinclair Research
QL Quboids	Arc	QL	£9.95	Sinclair Research
Labyrinthion	Ad	Spectrum	£2.95	Rino
Mugsy's Revenge	Ad	Spectrum	£8.95	Melbourne House
Bomb Jack	Arc	Spectrum	£7 95	Elite
Revenge of the C5	Arc	Spectrum	£1 95	Atlantis
Spindizzy	Arc	Spectrum	£9 95	Activision
Three Weeks in Paradise	Arc	Spectrum	£9.95	Micro-Gen
Vectron 3D	Arc	Spectrum	£7.95	Firebird
Who Dares Wins II	Arc	Spectrum	£7 95	Alligata
Samantha Fox Strip Poker	S	Spectrum	£8 95	Martech
SuperCom	S	Spectrum	£1 95	Atlantis

Key Ad – adventure S – strategy-simulation
Arc – arcade Ut – Utility Ed – education

BOOK

character-full graphics with such a wide freedom of action Here's an example – I decided to do a little furniture rearranging in one of the hospital bedrooms (don't ask me why there are hospital bedrooms) – having happily shunted around the bed and some chairs I decided to move some charts on the wall and what should I discover but . . I'll leave it to you

I spent hours with the game and hardly scratched the surface of what's possible – for one thing I haven't yet found a reason to press the button that lets you call' your little vacuum cleaner dog though it seems that some of the cubist monsters don't like water. The sound effects and music are wonderful as well No matter what else you've been saving for, buy this game, and have your Spectrum and Commodore owning friends green with envy It's out in three weeks

Program *Get Dexter*
Price *£9 95*
Micro *Amstrad CPCs*
Supplier *PSS*
452 Stoney Stanton Road
Coventry

mands, one by one his systematic and thorough, putting similar tutorial files provided with 'real', is, expensive wordprocessors, to shame

One excellent feature is a data merge facility that may be used in conjunction with a database like *Masterfile* or may be used with specially constructed files created with Tasword itself. Used with Tasword, data like names, addresses, and telephone numbers may be typed in prefixed with a special code for each type, eg, & T preceeding every telephone number This special document file can then be read by Tasword and a letter using, in turn, each name, address, telephone number printed out Ideal for form letters where the same text must be sent to a number of different people.

Another excellent Tasword addition For those with a microdrive and Masterfile, I should call it an essential purchase

Program *Tasword Three*
Price *£16 50*
Micro *Spectrum*
Supplier *Tasword Software*
Springfield House
Hyde Terrace
Leeds LS2 9LN

PLAY ALONG

Mupados is a company producing packages for the BBC and Electron specifically designed to be practical music teaching aids The packages are categorised according to the kind of musical instrument being learnt – Keyboards, Concert Pitch B Instruments and the Recorder The main difference between each being the transposition between the parts

I looked at the keyboard package and found much that was impressive All the instruction is based around six demo tunes – *Ghostbusters*, *War is Over*, *Chariots of Fire*, *Superman*, *Dress You Up* and *Hello* (at least they're recent) – these are supplied both on an audio cassette and as data played by the BBC (one channel only and a bit tinny)

Having chosen the song, you can listen to it played by the BBC with the music displayed at the same time If you wish, a beat counter (a metronome except it sounds like someone trudging through snow) will keep time and a bouncing ball will point out the exact note being played

The point of this is that you try, gradually, to copy the computer and play the tune on your own instrument, using the beat counter, replaying bars as necessary, and above all listening carefully to the tune when the computer plays it, as your guide A passable rendition achieved, you can then play along with the audio version of the tune with full (well, lots of synthesizers) backing which has had the melody line removed.

The process works better than I expected With only one note at a time to worry about, it's obviously intended for novices, but there are some tricky things in some of the songs which might amount to some sort of learning challenge Effectively *Micro – Maestro* is two things – a teacher prepared to play a tune over and over again at any speed you like until you've got it right and an ego boosting play-along with a real band as you and tape recorder become one

Micro-Maestro won't actually teach any of the basics of music nor is it suitable for those who already have a year or so's experience, but it will help complete novices associate melodic patterns with their notated form and it will help pick out popular tunes As such I think £14 95 is a little pricey, although the fact that the package actually features modern(ish) tunes on which copyright presumably has to be paid may justify that somewhat I was fairly impressed.

Program *Micro-Maestro (Keyboards)*
Price *£14 95*
Micro *BBC/Electron*
Supplier *Mupados*
Llambed Industrial Estate
Tregaron Road
Lampeter
Dyfed SA48 8LT

This Week

Activision, 15 Harley House, Marylebone Road London NW1, 01-486 7588 **Alligata,** 1 Orange Street Sheffield S1 4DW 0742 755796 **Atlantis,** 19 Prebend Street, London N1 8PF, 01-226 6703 **BJ Computing,** PO Box 4, Sheffield S1 1DU, 0742 558202 **Bubble Bus,** 87 High Street Tonbridge Kent TN9 1RX, 0732 355962 **Elite,** 55 Bradford Street Walsall WS1 3QD 0922 611215 **Firebird,** Wellington House Upper St Martin s Lane London WC2H 9DL, 01-379 6755 **Gremlin Graphics,** Alpha House 10 Carver Street Sheffield S1 4FS 0742 753423 **Martech,** Martech House Bay Terrace Pevensey Bay East Sussex BN24 6EE 0323 768456 **Micro-Gen,** 44 The Broadway Bracknell, Herts, 0344 427317 **Melbourne House,** 39 Milton Trading Estate Abingdon, Oxon OX14 4TD 0235 835001 **Rino,** 1 Orange Street, Sheffield 4DW, 0742 755796 **Sinclair Research,** Milton Hall Milton Cambridge CB4 4AE

Out of the swamp

Evolutionists argue over whether evolution is a slow gradual process or one where periods of relatively little change are interspersed with ones of rapid change. In the realms of home computing, both these phenomena can be seen to be taking place side by side.

One of the first home computers to be heralded as such was the Commodore Pet, although it was still too expensive to be bought by anyone other than a few enthusiasts.

Not until Sir Clive brought out the ZX80 and ZX81 was the price brought into the mass market range. The stupendous surge of interest in home computing that followed is well-known. Software, however, made the upwards transition fast enough to keep pace.

Look back at the time when the first sound and colour computers came out with built-in memory minus Ram pack wobble. Computers had hauled themselves out of the swamps of the Carboniferous and on to the dry land of the Cretaceous.

In the rapid expansion which followed many computers thrived and then became extinct, just as the dinosaurs before them, not through any intrinsic fault of their own but through a change in the surrounding environment. Lynx, Dragon, Aquarius, Oric – many well known names came and went.

The Commodore 64 and the 48K Spectrum, however, went from strength to strength.

It was now software's turn to go through an evolutionary phase, largely based on just these two machines. There was to be no leap here, however.

In the three or six years since these machines have been on the market, there has been a steady progression in the sophistication of the software produced as more of the machine's potential was exploited.

The success of these two machines, however, made it very difficult for anyone else to successfully break into the market.

It was no longer enough to just produce a good machine and let the software follow as these two had done. The buying public naturally compared the new machines' software with what was already available – and it never compared very favourably.

Recent history has shown us a lot. Only Amstrad has broken into the market with any degree of success. MSX machines, whilst having a hard core of support, have flopped dismally when you consider the big name companies making the machines. Commodore's C16 and Plus 14 did likewise and the QL hasn't exactly set the world on fire.

Consider that it is now almost *two* years since the QL was launched and then think of how Spectrum software developed in the two years following its launch.

It illustrates how poorly served the QL has been for software.

Amstrad's success was due largely to using existing technology more effectively than anyone else whilst providing the essential investment in software development.

What does all this mean for the future? The new 16-bit machines are going to be launched on a market where there is little good 16-bit software around with which to make comparisons. This will have to go through the same sort of slow evolution that the software for 8-bit machines went through.

The software produced will still have to be at least good enough to stand comparison with existing 8-bit software since people's expectations are that much higher than before.

The market is now such that only the strongest and fittest could survive and any new machine to emerge would have to be not only a product of technological efficiency, but be able to build a rapid and sophisticated software base.

Gettng the mix right is the key point on which new competers will survive or become another computing dodo.

Campbell Robertson

Puzzle No 199

"These new soap and talc gift sets are selling well," observed Molly as another customer paid for her purchases.

"They sure are," agreed her husband Jim, "And very good value too. I've seen similar sets for sale in town for almost a tenner!"

Molly studied the till receipts for a while and then remarked, "Here's a curious thing – a customer buying either a single set or buying sets in lots of two, three, four, five, six, seven, eight, or nine sets will have a total bill that in no case includes the digit 2!"

Can you say how much the gift sets were?

Solution to Puzzle 194

David is 6534 days old (17.88 years approx.), and Mary is 4356 days old (11.93 years approx.)

```
10 LET DAVID=9
20 LET MARY$=""
30 LET DAVID$=STR$(DAVID)
40 FOR N=1 TO LEN(DAVID$)
50 LET MARY$=MID$(DAVID$,N,1)+MARY$
60 NEXT N
70 LET MARY=VAL(MARY$)
80 IF MARY*1.5=DAVID THEN PRINT DAVID
90 LET DAVID=DAVID+9
100 GOTO 20
```

The solution is found by taking David's age, converting it into a string variable, and reversing the digits to arrive at a possible age for his sister, Mary. If this age multiplied by 1.5 is equal to the original age, then we have a possible pair of answers. In the program, David's age is generated in a *For/Next* loop (Line 10). The running time can be shortened considerably if we realise that the ages must both be multiples of nine. The digital roots of both ages must be equal to the same value as they contain the same digits, and moreover David's age is equal to Mary's age times 1.5 (digital root six). A simple rule of digital roots states that the digital root of the product of two numbers is the same as the product of the digital roots of the two numbers themselves. From this it is clear that only a DR of nine can produce this same value DR when multiplied by six (the DR of 1.5).

Winner of Puzzle No 194

The winner is Philip Trotn of Chesham, Bucks, who will be receiving £10.

Rules

The closing date for puzzle No 199 is April 6.

The Hackers

I'll just go for your user-manuals.

Hang on and I'll get the rest of them.

BEN'S


ATARI
64
The Gates of
speak of Magic. You
will need more than a
character of strength
and intelligence and
the keen nose of intui-
tion to overcome the
evil and power of the
Curse of Ra. The
monsters roam about
—Zombies, Ghouls
and the terrifying
minions of Apshai the
Insect God,
THE TEMPLE OF APSHAI TRILOGY
U.S. GOLD
EPYX